

DELIVERABLE DOCUMENT CONTROL SHEET

FINAL ANALYTICAL TAGA REPORT

DELFASCO FORGE SITE

EPA Work Assignment No.: 0-324

Lockheed Martin

Work Order No.: EAC00324

SIGNATURES

<u>Discipline</u>	<u>Reviewed</u>	<u>Date</u>	<u>Approved</u>	<u>Date</u>
Task Leader				
<i>John Wood</i>				
Analyst				
<i>John Wood</i>				
Peer				
<i>Danielle McCall</i>				
Peer				
<i>Scott Thompson</i>				
Group Leader				
Analytical Section Leader				
Air Response Section Leader				
<i>Jeffrey Bradstreet</i>				
Support Section Leader				
Technical Section Leader				
Data Validation & Report				
Writing Group Leader				
Technical Editor				
QA/QC Coordinator				
QA Officer				
<i>Deborah H. Killeen</i>				
Project Manager				
<i>Dennis A. Miller</i>				

DRAFT

DATE: 11 July 2008
TO: David Mickunas, U.S. EPA/ERT Work Assignment Manager
THROUGH: Jeffrey Bradstreet, REAC Air Response Section Leader
FROM: John Wood, REAC Task Leader
SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 0-324

Attached please find the following document prepared under this work assignment:

FINAL ANALYTICAL TAGA REPORT
DELEASCO FORGE SITE
GRAND PRAIRIE, TX
JULY 2008

cc: Central File - WA # 0-324(w/attachment)
Electronic File – I:/Archive/REAC4/0-324/D/FA/063008
Dennis A. Miller, REAC Program Manager (w/o attachment)

DRAFT

FINAL ANALYTICAL TAGA REPORT
DELFASCO FORGE SITE
GRAND PRAIRIE, TX
JULY 2008

U.S. EPA Work Assignment No.: 0-324
LOCKHEED MARTIN Work Order No.: EAC00324
U.S. EPA Contract No.: EP-C-04-032

Submitted to
David Mickunas
U.S. EPA/ERT

Prepared by:
Lockheed Martin/REAC

John Wood
REAC Task Leader

Date

Analysis and Preparation by:
John Wood

Dennis A. Miller
REAC Program Manager

Date

DRAFT

TABLE OF CONTENTS

PAGE

LIST OF TABLES	v
LIST OF FIGURES.....	vi
1.0 INTRODUCTION.....	1
2.0 METHODOLOGY.....	1
2.1 Mass Spectrometer/Mass Spectrometer General Theory	1
2.2 TAGA Procedure	1
2.2.1 TAGA Mass Calibration.....	2
2.2.2 TAGA Response Factor Measurements	2
2.2.3 Transport Efficiency	2
2.2.4 TAGA Air Monitoring.....	3
2.3 Meteorological Monitoring.....	3
3.0 TAGA AIR MONITORING RESULTS.....	4
3.1 Unit Surveys	4
3.2 TAGA File Event Summaries	4
3.3 Graphical Presentations	4
3.4 TAGA Target Compound Summaries	4
4.0 DISCUSSION OF RESULTS	4
4.1 Unit 002 Preliminary Survey, File DFF003	5
4.2 Unit 003 Preliminary Survey, File DFF004	5
4.3 Unit 004 Preliminary Survey, File DFF005	5
4.4 Unit 005 Preliminary Survey, File DFF006	5
4.5 Unit 006 Preliminary Survey, File DFF007	5
4.6 Unit 007 Preliminary Survey, File DFF008	5
4.7 Unit 008 Preliminary Survey, File DFF010	6
4.8 Unit 009 Preliminary Survey, File DFF011	6
4.9 Unit 010 Preliminary Survey, File DFF012	6
4.10 Unit 011 Preliminary Survey, File DFF013	6
4.11 Unit 012 Preliminary Survey, File DFF015	6
4.12 Unit 013 Preliminary Survey, File DFF016	6
4.13 Unit 014 Preliminary Survey, File DFF017	7
4.14 Unit 015 Preliminary Survey, File DFF018	7
4.15 Unit 015 Tedlar® Bag Analysis, File DFF021	7
4.16 Unit 001 Tedlar® Bag Analysis, File DFF023	7
4.17 Unit 016 Preliminary Survey One, File DFF026	7
4.18 Unit 016 Preliminary Survey Two, File DFF027.....	7
4.19 Unit 017 Preliminary Survey, File DFF028.....	7
4.20 Unit 003 Survey, File DFF033.....	8
4.21 Unit 016 Survey, File DFF034.....	8
4.22 Unit 018 Tedlar® Bag Analysis, File DFF035	8
4.23 Unit 009 Survey, File DFF036.....	8
4.24 Unit 013 Survey, File DFF037.....	8
4.25 Unit 008 Survey, File DFF038.....	8
5.0 QUALITY ASSURANCE/QUALITY CONTROL.....	9

5.1	Intermediate Response Factor for Ion Pairs	9
5.2	Error Bars	10
5.3	Ion Pair Detection and Quantitation Limits	10
5.4	Compound Detection and Quantitation Limits	11
APPENDIX	A	Standard Gas Cylinder Certification
APPENDIX	B	Compiled Meteorological Data

DRAFT

LIST OF TABLES

TABLE

- 1 Summary of Transport Efficiencies Measured on 20 May through 22 May 2008
- 2 Summary of Meteorological Conditions during Monitoring, 20 May through 22 May 2008
- 3 Summary of Response Factors and Error Bars for 20 May through 22 May 2008
- 4 Summary of Detection and Quantitation Limit Data for 20 May through 22 May 2008

DRAFT

LIST OF FIGURES

FIGURE

- 1a TAGA File Event Summary, File: DFF003 Acquired on 20 May 2008 at 08:17:53, Title: Unit 002 Preliminary Survey
- 1b Unit 002 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 1c TAGA Target Compound Summary for Unit 002 Preliminary Survey, File: DFF003 Acquired on 20 May 2008 at 08:17:53
- 2a TAGA File Event Summary, File: DFF004 Acquired on 20 May 2008 at 08:58:56, Title: Unit 003 Preliminary Survey
- 2b Unit 003 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 2c TAGA Target Compound Summary for Unit 003 Preliminary Survey, File: DFF004 Acquired on 20 May 2008 at 08:58:56
- 3a TAGA File Event Summary, File: DFF005 Acquired on 20 May 2008 at 09:39:20, Title: Unit 004 Preliminary Survey
- 3b Unit 004 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 3c TAGA Target Compound Summary for Unit 004 Preliminary Survey, File: DFF005 Acquired on 20 May 2008 at 09:39:20
- 4a TAGA File Event Summary, File: DFF006 Acquired on 20 May 2008 at 10:28:18, Title: Unit 005 Preliminary Survey
- 4b Unit 005 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 4c TAGA Target Compound Summary for Unit 005 Preliminary Survey, File: DFF006 Acquired on 20 May 2008 at 10:28:18
- 5a TAGA File Event Summary, File: DFF007 Acquired on 20 May 2008 at 11:03:17, Title: Unit 006 Preliminary Survey
- 5b Unit 006 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 5c TAGA Target Compound Summary for Unit 006 Preliminary Survey, File: DFF007 Acquired on 20 May 2008 at 11:03:17
- 6a TAGA File Event Summary, File: DFF008 Acquired on 20 May 2008 at 11:48:18, Title: Unit 007 Preliminary Survey
- 6b Unit 007 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 6c TAGA Target Compound Summary for Unit 007 Preliminary Survey, File: DFF008 Acquired on 20 May 2008 at 11:48:18
- 7a TAGA File Event Summary, File: DFF010 Acquired on 20 May 2008 at 14:01:12, Title: Unit 008 Preliminary Survey
- 7b Unit 008 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

LIST OF FIGURES (continued)

FIGURE

- 7c TAGA Target Compound Summary for Unit 008 Preliminary Survey, File: DFF010 Acquired on 20 May 2008 at 14:01:12
- 8a TAGA File Event Summary, File: DFF011 Acquired on 20 May 2008 at 15:00:32, Title: Unit 009 Preliminary Survey
- 8b Unit 009 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 8c TAGA Target Compound Summary for Unit 009 Preliminary Survey, File: DFF011 Acquired on 20 May 2008 at 15:00:32
- 9a TAGA File Event Summary, File: DFF012 Acquired on 20 May 2008 at 16:04:56, Title: Unit 010 Preliminary Survey
- 9b Unit 010 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 9c TAGA Target Compound Summary for Unit 010 Preliminary Survey, File: DFF012 Acquired on 20 May 2008 at 16:04:56
- 10a TAGA File Event Summary, File: DFF013 Acquired on 20 May 2008 at 16:53:15, Title: Unit 011 Preliminary Survey
- 10b Unit 011 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 10c TAGA Target Compound Summary for Unit 011 Preliminary Survey, File: DFF013 Acquired on 20 May 2008 at 16:53:15
- 11a TAGA File Event Summary, File: DFF015 Acquired on 20 May 2008 at 18:59:43, Title: Unit 012 Preliminary Survey
- 11b Unit 012 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 11c TAGA Target Compound Summary for Unit 012 Preliminary Survey, File: DFF015 Acquired on 20 May 2008 at 18:59:43
- 12a TAGA File Event Summary, File: DFF016 Acquired on 20 May 2008 at 19:41:01, Title: Unit 013 Preliminary Survey
- 12b Unit 013 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 12c TAGA Target Compound Summary for Unit 013 Preliminary Survey, File: DFF016 Acquired on 20 May 2008 at 19:41:01
- 13a TAGA File Event Summary, File: DFF017 Acquired on 20 May 2008 at 20:09:04, Title: Unit 014 Preliminary Survey
- 13b Unit 014 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 13c TAGA Target Compound Summary for Unit 014 Preliminary Survey, File: DFF017 Acquired on 20 May 2008 at 20:09:04

LIST OF FIGURES (continued)

FIGURE

- 14a TAGA File Event Summary, File: DFF018 Acquired on 20 May 2008 at 20:42:38, Title: Unit 015 Preliminary Survey
- 14b Unit 015 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 14c TAGA Target Compound Summary for Unit 015 Preliminary Survey, File: DFF018 Acquired on 20 May 2008 at 20:42:38
- 15a TAGA File Event Summary, File: DFF021 Acquired on 20 May 2008 at 22:25:26, Title: Unit 015 Tedlar® Bag Analysis
- 15b Unit 015 Tedlar® Bag Analysis for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 15c TAGA Target Compound Summary for Unit 015 Tedlar® Bag Analysis, File: DFF021 Acquired on 20 May 2008 at 22:25:26
- 16a TAGA File Event Summary, File: DFF023 Acquired on 21 May 2008 at 09:29:31, Title: Unit 001 Tedlar® Bag Analysis
- 16b Unit 001 Tedlar® Bag Analysis for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 16c TAGA Target Compound Summary for Unit 001 Tedlar® Bag Analysis, File: DFF023 Acquired on 21 May 2008 at 09:29:31
- 17a TAGA File Event Summary, File: DFF026 Acquired on 21 May 2008 at 10:41:59, Title: Unit 016 Preliminary Survey One
- 17b Unit 016 Preliminary Survey One for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 17c TAGA Target Compound Summary for Unit 016 Preliminary Survey One, File: DFF026 Acquired on 21 May 2008 at 10:41:59
- 18a TAGA File Event Summary, File: DFF027 Acquired on 21 May 2008 at 11:10:12, Title: Unit 016 Preliminary Survey Two
- 18b Unit 016 Preliminary Survey Two for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 18c TAGA Target Compound Summary for Unit 016 Preliminary Survey Two, File: DFF027 Acquired on 21 May 2008 at 11:10:12
- 19a TAGA File Event Summary, File: DFF028 Acquired on 21 May 2008 at 15:46:41, Title: Unit 017 Preliminary Survey
- 19b Unit 017 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 19c TAGA Target Compound Summary for Unit 017 Preliminary Survey, File: DFF028 Acquired on 21 May 2008 at 15:46:41
- 20a Unit 003 Survey Floor Plan, DFF033
- 20b TAGA File Event Summary, File: DFF033 Acquired on 22 May 2008 at 09:04:20, Title: Unit 003 Survey

LIST OF FIGURES (continued)

FIGURE

- 20c Unit 003 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 20d TAGA Target Compound Summary for Unit 003 Survey, File: DFF033 Acquired on 22 May 2008 at 09:04:20
- 21a Unit 016 Survey Floor Plan, DFF034
- 21b TAGA File Event Summary, File: DFF034 Acquired on 22 May 2008 at 09:45:36, Title: Unit 016 Survey
- 21c Unit 016 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 21d TAGA Target Compound Summary for Unit 016 Survey, File: DFF034 Acquired on 22 May 2008 at 09:45:36
- 22a TAGA File Event Summary, File: DFF035 Acquired on 22 May 2008 at 10:40:08, Title: Unit 018 Tedlar® Bag Analysis
- 22b Unit 018 Tedlar® Bag Analysis for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 22c TAGA Target Compound Summary for Unit 018 Tedlar® Bag Analysis, File: DFF035 Acquired on 22 May 2008 at 10:40:08
- 23a Unit 009 Survey Floor Plan, DFF036
- 23b TAGA File Event Summary, File: DFF036 Acquired on 22 May 2008 at 11:30:09, Title: Unit 009 Survey
- 23c Unit 009 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 23d TAGA Target Compound Summary for Unit 009 Survey, File: DFF036 Acquired on 22 May 2008 at 11:30:09
- 24a Unit 013 Survey Floor Plan, DFF037
- 24b TAGA File Event Summary, File: DFF037 Acquired on 22 May 2008 at 12:13:32, Title: Unit 013 Survey
- 24c Unit 013 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 24d TAGA Target Compound Summary for Unit 013 Survey, File: DFF037 Acquired on 22 May 2008 at 12:13:32
- 25a Unit 008 Survey Floor Plan, DFF038
- 25b TAGA File Event Summary, File: DFF038 Acquired on 22 May 2008 at 15:19:50, Title: Unit 008 Survey
- 25c Unit 008 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene
- 25d TAGA Target Compound Summary for Unit 008 Survey, File: DFF038 Acquired on 22 May 2008 at 15:19:50

DRAFT

1.0 INTRODUCTION

The Environmental Protection Agency (EPA)/Environmental Response Team (ERT) issued Work Assignment (WA) Number 0-324, Delfasco Forge Site in Grand Prairie, Texas (TX), to Lockheed Martin under the Response Engineering and Analytical Contract (REAC). As an element of this WA, REAC personnel were to conduct target compound monitoring using the ECA Trace Atmospheric Gas Analyzer (TAGA) Ile, to assist EPA Region VI in its investigation of residential indoor air quality.

The TAGA air monitoring events conducted on 20 May through 22 May 2008 were screening in nature. Air monitoring for dichloroethene (DCE), trichloroethene (TCE), and tetrachloroethene (PCE) was performed in accordance with the REAC Draft Standard Operating Procedure (SOP) # 1711, *Trace Atmospheric Gas Analyzer (TAGA) Ile Operations*. Real-time monitoring for the target compounds was performed using a selected ion technique.

2.0 METHODOLOGY

2.1 Mass Spectrometer/Mass Spectrometer General Theory

The ECA TAGA Ile is based upon the Perkin-Elmer API 365 mass spectrometer/mass spectrometer (MS/MS) and is a direct air-monitoring instrument capable of detecting, in real time, trace levels of many organic compounds in ambient air. The technique of triple quadrupole MS/MS is used to differentiate and quantitate compounds.

The initial step in the MS/MS process involves simultaneous chemical ionization of the compounds present in a sample of ambient air. The ionization produces both positive and negative ions by donating or removing one or more electrons. The chemical ionization is a "soft" ionization technique, which allows ions to be formed with little or no structural fragmentation. These ions are called parent ions. The parent ions with different mass-to-charge (m/z) ratios are separated by the first quadrupole (the first MS of the MS/MS system). The quadrupole scans selected m/z ratios allowing only the parent ions with these ratios to pass through the quadrupole. Parent ions with m/z ratios different than those selected are discriminated electronically and fail to pass through the quadrupole.

The parent ions selected in the first quadrupole are accelerated through a collision cell containing uncharged nitrogen molecules in the second quadrupole. A portion of the parent ions entering the second quadrupole fragments as they collide with the nitrogen molecules. These fragment ions are called daughter ions. This process, in the second quadrupole, is called collision induced dissociation. The daughter ions are separated according to their m/z ratios by the third quadrupole (the second MS of the MS/MS system). The quadrupole scans selected m/z ratios, allowing only the daughter ions with these ratios to pass through the quadrupole. Daughter ions with m/z ratios different than those selected are discriminated electronically and fail to pass through the quadrupole. Daughter ions with the selected m/z ratios are then counted by an electron multiplier. The resulting signals are measured in ion counts per second (icps) for each parent/daughter ion pair selected. The intensity of the icps for each parent/daughter ion pair is directly proportional to the ambient air concentration of the organic compound that produced the ion pair. All of the ions discussed in this report have a single charge. The m/z ratios of all of the ions discussed are equal to the ion masses in atomic mass units (amu). Therefore, the terms parent and daughter masses are synonymous with parent and daughter ion m/z ratios.

2.2 TAGA Procedure

The TAGA was used to monitor indoor air during stationary monitoring events, and to analyze Tedlar[®] bag samples of soil gas. Indoor monitoring utilized a 200-foot corrugated Teflon[®] sampling hose. The proximal end was attached to the TAGA source inlet, while the distal end was taken inside a unit. Air was continuously drawn through the hose at a set flow rate and

transported to the TAGA source during the monitoring event. For Tedlar[®] bag analyses, each bag was attached directly to the inlet to the TAGA ionization source.

2.2.1 TAGA Mass Calibration

At the beginning of the monitoring period, a gas mixture containing benzene, toluene, xylenes, tetrachloroethene, trichloroethene, 1,1-dichloroethene, and vinyl chloride was introduced by a mass flow controller (MFC) into the sample air flow (SAF). The tuning parameters for the first quadrupole at 30, 78, 106, 130, and 166 amu, and the third quadrupole at 30, 78, 105, 129, and 166 amu were optimized for sensitivity and mass assignment. The peak widths were limited between 0.55 amu and 0.85 amu. The mass assignments were set to the correct values within 0.15 amu.

2.2.2 TAGA Response Factor Measurements

The TAGA was calibrated for the target compounds at the beginning, middle, and end of each day. The calibration system consisted of a regulated gas cylinder containing a gas standard mixture of the target compounds connected to an in-line MFC. The MFC was calibrated with a National Institute of Standards and Technology (NIST) traceable flow rate meter. The gas standard certification is presented in Appendix A. The gas standard containing a known mixture of target compounds, certified by the supplier, was regulated at preset flow rates, and diluted with ambient air. The dilution of the gas standard resulted in known analyte concentrations. The calibration consisted of a zero point and five known concentrations obtained by setting the MFC to 0, 10, 20, 40, 80, and 90 milliliters per minute (mL/min) with the SAF at 1,500 milliliters per second (mL/sec).

The approximate concentration range of standards introduced into the TAGA was between 1 and 25 parts per billion by volume (ppbv). Utilizing the analytes' concentrations, gas flow rates, air sampling flow rates, and atmospheric pressure, response factors (RFs), in units of ion counts per second per part per billion by volume (icps/ppbv), were calculated for each ion pair by using a least-square-fit algorithm to calculate the slope of its curve. The coefficient of correlation was checked for each ion pair's RF to ensure that it was greater than 0.90. The intermediate response factor (IRF) was calculated between pairs of calibrations and used to quantify target compounds in ambient air. In one case, the RF of each analyte was used to quantify the target compounds in a Tedlar[®] bag sample.

2.2.3 Transport Efficiency

The transport efficiency and residence time for the target compounds through the 200-foot length of corrugated Teflon[®] sampling hose was determined prior to and at the conclusion of indoor air monitoring activities each day. The transport efficiency was determined by introducing a known concentration of the target compounds into the proximal end and then into the distal end of the sampling hose. The signal intensity of each ion pair for each compound was measured in icps and the percent (%) transport efficiency calculated using the equation below:

$$\% \text{ transport efficiency} = \frac{\text{signal intensity at the distal end of the hose}}{\text{signal intensity at the proximal end of the hose}} \times 100$$

A transport efficiency of 85 % is considered acceptable and results are summarized in Table 1.

The residence time is the interval, in seconds, it takes the air sample to travel the length

of the sampling hose. The residence time, which reflects a time difference between the sampling and the instrument response, is incorporated in the offset. The offset, which is the total number of sequences acquired during the residence time, is applied to the monitoring files (Figures 1a to 14a, 17a to 19a, 1b to 14b, 17b to 21b, 23b to 25b, 20c, 21c, and 23c to 25c). Therefore, the observations and instrument responses are temporally coordinated.

2.2.4 TAGA Air Monitoring

TAGA monitoring was performed by continuously drawing air through the Teflon[®] hose at a flow-rate of approximately 1,500 mL/sec. The air was then passed through a glass splitter where the pressure gradient between the mass spectrometer core and the atmosphere causes a sample flow of approximately 10 mL/min into the ionization source through a heated transfer line. The flow into the TAGA source was controlled so that the ionization source pressure was maintained at an optimum value of approximately 1.2 torr. The remaining airflow was drawn through the air pump and vented from the TAGA bus.

Monitoring was performed in the parent/daughter ion-monitoring mode. As monitoring proceeded, the operator pressed letter keys (flags), alphabetically on a computer keyboard, to denote events or locations during the monitoring event. This information was also recorded on an event log sheet. The intensity of each parent/daughter ion pair monitored by the TAGA was recorded in a permanent file on the computer's hard drive. One set of recorded measurements of all the ion pairs is called a sequence.

At the beginning of each preliminary survey, a one-minute pre-entry ambient data segment was collected. For each preliminary survey, at the operator's signal, the sampler proceeded to the crawl space. If access to the crawl space was inside the unit, the sampler went to the room or closet containing the crawl space access, where a one-minute data segment was collected. Then the access hatch was opened, and a one-minute data segment was collected from the crawl space. If access to the crawl space was through an external opening, the crawl space was monitored immediately after completing the pre-entry ambient, then the unit was entered, and a one-minute data segment was collected from the inside of the unit. At the conclusion of the preliminary survey, a one-minute post-exit ambient data segment was collected. Upon completion of the one-minute post-exit ambient data segment, the instrumentation was challenged with the calibration standard, which was introduced at 30 mL/min (approximately 7 ppbv), to verify that the system was functioning properly.

At the beginning of each survey, a one-minute pre-entry ambient data segment was collected. At the operator's signal, the sampler then entered the unit while holding the distal end of the hose at breathing height. The sampler proceeded to each room in the unit where one-minute data segments were collected. After the rooms in the unit were monitored, a one-minute post-exit ambient data segment was collected. Upon completion of the one-minute post-exit ambient data segment, the instrumentation was challenged with the calibration standard, which was introduced at 30 mL/min (approximately 7 ppbv), to verify that the system was functioning properly.

2.3 Meteorological Monitoring

United States Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center provided the meteorological data for 05/19/08 through 05/23/08. Data were collected by the Dallas Executive Airport in Dallas, TX. The Dallas Executive Airport is located approximately 5 miles southeast of the Delfasco Forge Site. Meteorological data, such as wind speed, wind direction, and rainfall, are summarized in Table 2 for the periods during

which monitoring occurred. The compiled meteorological data are presented in Appendix B. The reported data for rainfall is an average of the data recorded during the hour preceding the time recorded in the table. The reported meteorological data for wind speed and direction represent a five-minute average collected prior to the time recorded in the table. Because of the distance of the meteorological monitoring location from the study location and the short averaging period, care should be exercised in relating meteorological conditions existing at the Delfasco Forge Site.

3.0 TAGA AIR MONITORING RESULTS

The TAGA was used to survey indoor air in residential units in the vicinity of the Delfasco Forge Site, and to analyze Tedlar® bag samples of sub-surface gas.

3.1 Unit Surveys

Figures 20a, 21a, and 23a through 25a, present the approximate floor plans of each unit. The SUMMA® canister sampling locations are also depicted in these floor plans. The monitoring locations marked by letters are the "flags" that the TAGA operator placed into the file. These "flags" mark events and are carried through the rest of the data presentation.

3.2 TAGA File Event Summaries

Figures 1a through 19a, 20b, 21b, 22a, and 23b through 25b present the TAGA file event summaries. These are the observations made during the file acquisition by the TAGA operator, along with the times from the TAGA file and the letter "flags" used to mark the data, which are recorded by the TAGA computer.

3.3 Graphical Presentations

Figures 1b through 19b, 20c, 21c, 22b, and 23c through 25c are the graphical representations of the TAGA files. A graph of each target compound concentration is presented with ppbv plotted on the vertical axis, and time into the acquisition, in minutes, on the horizontal axis. The target compound concentration was calculated by averaging the concentrations obtained from the ion pairs that were monitored for each target compound. There are two horizontal lines on each graph. The lower line is set at the detection limit (DL) for the compound. The higher line is set at the concentration equal to the quantitation limit (QL) for the target compound. When high concentrations are represented, the lower DL line may not be readily discerned. Transient, momentary spikes above the QL line are occasionally observed. These spikes, electronic in nature, do not affect average concentrations. They may be distinguished from elevated concentrations because the spikes are only present for one sequence and are often only present for one ion pair of the monitored compound.

3.4 TAGA Target Compound Summaries

Figures 1c through 19c, 20d, 21d, 22c, and 23d through 25d present the TAGA target compound summaries. These figures contain the concentrations of the target compounds averaged over time, at the various locations logged into the TAGA file event summaries.

4.0 DISCUSSION OF RESULTS

The TAGA target compound summaries are represented in Figures 1c through 19c, 20d, 21d, 22c, and 23d through 25d. During each survey, a one-minute average was measured in each room, or at various locations within a room. Only the highest average concentrations above the QL are listed below. Three Tedlar® bag samples of soil gas were analyzed at the request of the WAM.

4.1 Unit 002 Preliminary Survey, File DFF003

A preliminary survey was conducted in Unit 002 on 20 May 2008 at 08:17:53 and is represented in Figures 1a through 1c. The average wind speed and direction at the airport for the five-minute period ending at 08:32 were calm. There was no precipitation during the preceding hour. The highest average concentration of tetrachloroethene was 0.84 ppbv in the closet with the hatch, between flags H and I. The average concentrations of dichloroethene and trichloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.2 Unit 003 Preliminary Survey, File DFF004

A preliminary survey was conducted in Unit 003 on 20 May 2008 at 08:58:56 and is represented in Figures 2a through 2c. The average wind speed and direction at the airport during the monitoring period were 6 miles per hour (mph) from 220 degrees. There was no precipitation during the preceding hour. The highest average concentrations were: tetrachloroethene, 0.33 ppbv, and trichloroethene, 16 ppbv, both in the crawl space, between flags F and G. The average concentration of dichloroethene was not detected above its quantitation limit at any of the monitoring locations.

4.3 Unit 004 Preliminary Survey, File DFF005

A preliminary survey was conducted in Unit 004 on 20 May 2008 at 09:39:20 and is represented in Figures 3a through 3c. The average wind speed and direction at the airport during the monitoring period were 8 mph from 255 degrees. There was no precipitation during the preceding hour. None of the target compounds was detected above its quantitation limit at any of the monitoring locations.

4.4 Unit 005 Preliminary Survey, File DFF006

A preliminary survey was conducted in Unit 005 on 20 May 2008 at 10:28:18 and is represented in Figures 4a through 4c. The average wind speed and direction at the airport for the five-minute period ending at 10:24 were 3 mph from 340 degrees. There was no precipitation during the preceding hour. None of the target compounds was detected above its quantitation limit at any of the monitoring locations.

4.5 Unit 006 Preliminary Survey, File DFF007

A preliminary survey was conducted in Unit 006 on 20 May 2008 at 11:03:17 and is represented in Figures 5a through 5c. The average wind speed and direction at the airport during the monitoring period were 5 mph from 35 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 0.96 ppbv in the crawl space, between flags F and G. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.6 Unit 007 Preliminary Survey, File DFF008

A preliminary survey was conducted in Unit 007 on 20 May 2008 at 11:48:18 and is represented in Figures 6a through 6c. The average wind speed and direction at the airport for the five-minute period ending at 11:53 were 6 mph from 60 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 0.13 ppbv in the crawl space, between flags F and G. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.7 Unit 008 Preliminary Survey, File DFF010

A preliminary survey was conducted in Unit 008 on 20 May 2008 at 14:01:12 and is represented in Figures 7a through 7c. The average wind speed and direction at the airport for the five-minute period ending at 13:53 were 9 mph from 70 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 5.5 ppbv in the crawl space through hatch two, between flags H and I. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.8 Unit 009 Preliminary Survey, File DFF011

A preliminary survey was conducted in Unit 009 on 20 May 2008 at 15:00:32 and is represented in Figures 8a through 8c. The average wind speed and direction at the airport for the five-minute period ending at 14:53 were 9 mph from 60 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 5.4 ppbv in the crawl space, between flags C and D. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.9 Unit 010 Preliminary Survey, File DFF012

A preliminary survey was conducted in Unit 010 on 20 May 2008 at 16:04:56 and is represented in Figures 9a through 9c. The average wind speed and direction at the airport for the five-minute period ending at 15:53 were 10 mph from 30 degrees. There was no precipitation during the preceding hour. None of the target compounds was detected above its quantitation limit at any of the monitoring locations.

4.10 Unit 011 Preliminary Survey, File DFF013

A preliminary survey was conducted in Unit 011 on 20 May 2008 at 16:53:15 and is represented in Figures 10a through 10c. The average wind speed and direction at the airport for the five-minute period ending at 16:53 were 11 mph from 40 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 0.38 ppbv in the crawl space, between flags F and G. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.11 Unit 012 Preliminary Survey, File DFF015

A preliminary survey was conducted in Unit 012 on 20 May 2008 at 18:59:43 and is represented in Figures 11a through 11c. The average wind speed and direction at the airport for the five-minute period ending at 18:53 were 8 miles per hour (mph) from 50 degrees. There was no precipitation during the preceding hour. The highest average concentrations were: tetrachloroethene, 0.15 ppbv, and trichloroethene, 2.5 ppbv, both in the crawl space, between flags H and I. The average concentration of dichloroethene was not detected above its quantitation limit at any of the monitoring locations.

4.12 Unit 013 Preliminary Survey, File DFF016

A preliminary survey was conducted in Unit 013 on 20 May 2008 at 19:41:01 and is represented in Figures 12a through 12c. The average wind speed and direction at the airport for the five-minute period ending at 19:53 were 7 mph from 60 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 2.0 ppbv in the crawl space, between flags F and G. The average concentrations of dichloroethene and

tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.13 Unit 014 Preliminary Survey, File DFF017

A preliminary survey was conducted in Unit 014 on 20 May 2008 at 20:09:04 and is represented in Figures 13a through 13c. The average wind speed and direction at the airport for the five-minute period ending at 19:53 were 7 mph from 60 degrees. There was no precipitation during the preceding hour. None of the target compounds was detected above its quantitation limit at any of the monitoring locations.

4.14 Unit 015 Preliminary Survey, File DFF018

A preliminary survey was conducted in Unit 015 on 20 May 2008 at 20:42:38 and is represented in Figures 14a through 14c. The average wind speed and direction at the airport for the five-minute period ending at 20:53 were 7 mph from 50 degrees. There was no precipitation during the preceding hour. The highest average concentration was: tetrachloroethene, 0.52 ppbv, in the closet, between flags D and E. The average concentrations of trichloroethene and dichloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.15 Unit 015 Tedlar® Bag Analysis, File DFF021

A Tedlar® bag sample was collected on 20 May 2008 at 20:51 from the sub-surface probe in Unit 015 and analyzed on the TAGA on 20 May 2008 at 22:25:26 and is represented in Figures 15a through 15c. The highest average concentration was: tetrachloroethene, 5.3 ppbv, between flags A and B. The average concentrations of trichloroethene and dichloroethene were not detected above their quantitation limits.

4.16 Unit 001 Tedlar® Bag Analysis, File DFF023

A Tedlar® bag sample was collected on 21 May 2008 at 09:05 from the sub-surface probe in Unit 001 and analyzed on the TAGA on 21 May 2008 at 09:29:31 and is represented in Figures 16a through 16c. None of the target compounds was detected above its quantitation limit.

4.17 Unit 016 Preliminary Survey One, File DFF026

A preliminary survey was conducted in Unit 016 on 21 May 2008 at 10:41:59 and is represented in Figures 17a through 17c. The average wind speed and direction at the airport for the five-minute period ending at 10:53 were 11 mph from 130 degrees. There was no precipitation during the preceding hour. The highest average concentration was: trichloroethene, 13 ppbv, in the crawl space, between flags C and D. The average concentrations of tetrachloroethene and dichloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.18 Unit 016 Preliminary Survey Two, File DFF027

A preliminary survey was conducted in Unit 016 on 21 May 2008 at 11:10:12 and is represented in Figures 18a through 18c. The average wind speed and direction at the airport for the five-minute period ending at 10:53 were 11 mph from 130 degrees. There was no precipitation during the preceding hour. The highest average concentration was: trichloroethene, 12 ppbv, under the kitchen sink, between flags F and G. The average concentrations of tetrachloroethene and dichloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.19 Unit 017 Preliminary Survey, File DFF028

A preliminary survey was conducted in Unit 017 on 21 May 2008 at 15:46:41 and is represented in Figures 19a through 19c. The average wind speed and direction at the airport for the five-minute period ending at 15:53 were 16 mph from 150 degrees. There was no precipitation during the preceding hour. None of the target compounds was detected above its quantitation limit at any of the monitoring locations.

4.20 Unit 003 Survey, File DFF033

Unit 003 was surveyed on 22 May 2008 at 09:04:20 and is represented in Figures 20a through 20d. The average wind speed and direction during the monitoring period were 15 mph from 160 degrees. There was no precipitation during the preceding hour. The highest average concentrations were: tetrachloroethene, 0.39 ppbv, and trichloroethene, 31 ppbv, both in the crawl space, between flags T and U. The average concentration of dichloroethene was not detected above its quantitation limit at any of the monitoring locations.

4.21 Unit 016 Survey, File DFF034

Unit 016 was surveyed on 22 May 2008 at 09:45:36 and is represented in Figures 21a through 21d. The average wind speed and direction at the airport for the five-minute period ending at 09:53 were 16 mph from 160 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 9.3 ppbv in the crawl space, between flags S and T. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.22 Unit 018 Tedlar® Bag Analysis, File DFF035

A Tedlar® bag sample was collected on 22 May 2008 at 08:25 from the sub-surface probe in Unit 018 and analyzed on the TAGA on 22 May 2008 at 10:40:08 and is represented in Figures 22a through 22c. The highest average concentrations were: trichloroethene, 20 ppbv, and tetrachloroethene, 0.31 ppbv, between flags A and B. The average concentration of dichloroethene was not detected above its quantitation limit.

4.23 Unit 009 Survey, File DFF036

Unit 009 was surveyed on 22 May 2008 at 11:30:09 and is represented in Figures 23a through 23d. The average wind speed and direction at the airport for the five-minute period ending at 11:53 were 17 mph from 170 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 1.9 ppbv in the crawl space, between flags S and T. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.24 Unit 013 Survey, File DFF037

Unit 013 was surveyed on 22 May 2008 at 12:13:32 and is represented in Figures 24a through 24d. The average wind speed and direction at the airport for the five-minute period ending at 12:53 were 23 mph from 160 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 0.64 ppbv in the laundry, between flags H and I. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

4.25 Unit 008 Survey, File DFF038

Unit 008 was surveyed on 22 May 2008 at 15:19:50 and is represented in Figures 25a through 25d. The average wind speed and direction at the airport for the five-minute period ending at

15:53 were 16 mph from 160 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 3.2 ppbv in crawl space two, between flags R and S. The average concentrations of dichloroethene and tetrachloroethene were not detected above their quantitation limits at any of the monitoring locations.

DRAFT

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The compound parent/daughter ion pairs used are listed below.

Compound	Parent Ion Mass	Daughter Ion Mass
Dichloroethene	96	61
Dichloroethene	98	61
Trichloroethene	130	95
Trichloroethene	132	95
Trichloroethene	132	97
Tetrachloroethene	164	129
Tetrachloroethene	166	129
Tetrachloroethene	166	131

Tables 3 and 4 document the RFs and IRFs generated during the calibration procedure for the individual ion pairs. Response Factors and Intermediate Response Factors were used to quantitate the ion pair concentrations.

The summaries of detection and quantitation limit data for the monitoring periods (Section 5.3 and Table 4) document the concentration, in ppbv, required for a compound's ion pair to be considered detectable and quantifiable during the specified monitoring period. The DL is defined as three times the standard deviation of the concentration for a compound's ion pair measured in an ambient air sample. The QL is defined as 10 times the standard deviation of the concentration for the same conditions.

The summaries of the target compound detection and quantitation limits measured during the monitoring periods (Section 5.4 and Table 4) document the concentration, in ppbv, required for the compound to be considered detectable and quantifiable. The detection and quantitation limits for a compound result from averaging the appropriate detection and quantitation limits of the compound's ion pairs.

5.1 Intermediate Response Factor for Ion Pairs

Response factors were generated from two calibration events, as described in the procedure (Section 2.2.2.). Table 3 contains the RFs in units of icps/ppbv. The initial and final RFs were used to calculate the IRFs, which were used to calculate the reported concentration results.

The following equation was used to calculate the IRFs found in Tables 3 and 4:

$$IRF = \frac{2(RF_1 \times RF_2)}{(RF_1 + RF_2)}$$

where:

IRF = Intermediate response factor (icps/ppbv)

RF₁ = The RF for an ion pair measured during the first calibration event (icps/ppbv)

RF₂ = The RF for the same ion pair measured during the second calibration event (icps/ppbv)

For example, the entry for the 96/61 ion pair of dichloroethene from Table 3 for files DFF009 and DFF014, 20 May 2008 is:

$$RF_1 = 670.25 \text{ icps/ppbv}$$

$$RF_2 = 619.32 \text{ icps/ppbv}$$

therefore,

$$IRF = \frac{2(670.25 \times 619.32)}{(670.25 + 619.32)} = \frac{830,198.46}{1,289.57} = 643.78 \text{ icps/ppbv}$$

The result, 643.78 icps/ppbv, is the IRF reported in Table 3 and used in Table 4.

5.2 Error Bars

The potential maximum concentration percent deviations for each target compound are presented in Table 3 and are called “error bars” for simplicity. They represent the potential bias in the concentration due to changes in the sensitivity of the TAGA instrument. Errors bars were calculated using the following equation:

$$\text{error bar} = \frac{|RF_1 - RF_2|}{(RF_1 + RF_2)} \times 100$$

where:

error bar = Maximum concentration percent deviation

RF_1 = The RF for an ion pair measured during the first calibration event (icps/ppbv)

RF_2 = The RF for the same ion pair measured during the second calibration event (icps/ppbv)

For example, the entry for the 96/61 ion pair of dichloroethene from Table 3 for files DFF009 and DFF014, 20 May 2008 is:

$$RF_1 = 670.25 \text{ icps/ppbv}$$

$$RF_2 = 619.32 \text{ icps/ppbv}$$

$$\text{error bar} = \frac{|670.25 - 619.32|}{(670.25 + 619.32)} \times 100 = 3.95\%$$

The % error bar calculated for the 96/61 ion pair of dichloroethene is 3.95% for files DFF009 and DFF014, 20 May 2008.

The above calculation was repeated for each ion pair. The error bars for each compound's ions were averaged to give a single value for the compound. This averaged error bar can be applied to the samples analyzed between the two calibrations of the monitoring period.

5.3 Ion Pair Detection and Quantitation Limits

The DLs and QLs were calculated using the standard deviation (SD) of the compound's ion pair intensity measured in an ambient air sample and its RF. The SD reflects the variability of the instrument's response to the ambient air sample.

The following equation was used to calculate the DLs found in Table 4:

$$DL = \frac{3 \times SD}{RF/IRF}$$

where:

DL = Detection limit for an ion pair (ppbv)
SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
RF/IRF = Response factor/intermediate response factor for an ion pair (icps/ppbv)

For example, the entry for the 96/61 ion pair of dichloroethene from Table 4, files DFF009 and DFF014, 20 May 2008 is:

SD = 5.2847 icps
IRF = 643.78 icps/ppbv

$$DL = \frac{3 \times 5.2847}{643.78} = 0.0246 \text{ ppbv}$$

The following equation was used to calculate the QLs found in Table 4:

$$QL = \frac{10 \times SD}{RF/IRF}$$

where:

QL = Quantitation limit concentration for an ion pair (ppbv)
SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
RF/IRF = Response factor/intermediate response factor for an ion pair (icps/ppbv)

For example, the entry for the 96/61 ion pair of dichloroethene from Table 4 for files DFF009 and DFF014, 20 May 2008 is:

SD = 5.2847 icps
IRF = 643.78 icps/ppbv

$$QL = \frac{10 \times 5.2847}{643.78} = 0.0821 \text{ ppbv}$$

5.4 Compound Detection and Quantitation Limits

Averaging the respective DLs and QLs of the target compound's ion pairs found in Table 4 generated the DLs and QLs found in Table 4.

The following equation was used to calculate the compound's DL:

$$DL_c = \frac{DL_1 + DL_2 + \dots + DL_n}{n}$$

where:

DL_c = Detection limit for a compound (ppbv)
 DL₁ = Detection limit for the first ion pair (ppbv)
 DL₂ = Detection limit for the second ion pair (ppbv)
 DL_n = Detection limit for the nth ion pair (ppbv)
 n = Number of ion pairs to be averaged

For example, using the entries for the 96/61 and 98/61 ion pairs of dichloroethene from Table 4 for files DFF009 and DFF014, 20 May 2008 is:

$$DL_c = \frac{0.0246 + 0.0704}{2} = \frac{0.0950}{2} = 0.0475 \text{ ppbv}$$

This result, 0.0475 ppbv, rounded to 0.048 ppbv is the DL for dichloroethene found in Table 4.

The following equation was used to calculate the compound's QL:

$$QL_c = \frac{QL_1 + QL_2 + \dots + QL_n}{n}$$

where:

QL_c = Quantitation limit for a compound (ppbv)
 QL₁ = Quantitation limit for the first ion pair (ppbv)
 QL₂ = Quantitation limit for the second ion pair (ppbv)
 QL_n = Quantitation limit for the nth ion pair (ppbv)
 n = Number of ion pairs to be averaged

For example, using the entries for the 96/61 and 98/61 ion pair of dichloroethene from Table 4 for files DFF009 and DFF014, 20 May 2008 is:

$$QL_c = \frac{0.0821 + 0.235}{2} = \frac{0.317}{2} = 0.158 \text{ ppbv}$$

This result, 0.158 ppbv, rounded to 0.16 ppbv is the QL for dichloroethene found in Table 4.

TABLES

DRAFT

DRAFT

TABLE 1
Summary of Transport Efficiencies Measured on 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Transport Efficiency for 20 May 2008 07:02:47 File: DFF002				
Start Sequence:		401	631	
End Sequence:		471	702	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Dichloroethene	96/61	3791.8	3766.3	99.3
Dichloroethene	98/61	1277.9	1317.4	103.1
Average Dichloroethene Transport Efficiency:				101.2
Trichloroethene	130/95	6862.4	6783.4	98.8
Trichloroethene	132/95	2175.6	2141.5	98.4
Trichloroethene	132/97	3890.6	3862.4	99.3
Average Trichloroethene Transport Efficiency:				98.9
Tetrachloroethene	164/129	2736.8	2898.9	105.9
Tetrachloroethene	166/129	1554.6	1571.8	101.1
Tetrachloroethene	166/131	4232.8	4162.8	98.3
Average Tetrachloroethene Transport Efficiency:				101.8

Transport Efficiency for 20 May 2008 21:21:17 File: DFF020				
Start Sequence:		111	394	
End Sequence:		253	464	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Dichloroethene	96/61	3161.2	3206.3	101.4
Dichloroethene	98/61	1113.6	1128.3	101.3
Average Dichloroethene Transport Efficiency:				101.4
Trichloroethene	130/95	5783.3	5880.8	101.7
Trichloroethene	132/95	1701.4	1757.5	103.3
Trichloroethene	132/97	3138.7	3207.2	102.2
Average Trichloroethene Transport Efficiency:				102.4
Tetrachloroethene	164/129	2532.9	2626.8	103.7
Tetrachloroethene	166/129	1686.5	1684.5	99.9
Tetrachloroethene	166/131	4643.3	4603.7	99.1
Average Tetrachloroethene Transport Efficiency:				100.9

PM/DM = Parent mass/Daughter mass
icps = Ion counts per second
% = Percent

TABLE 1 (continued)
Summary of Transport Efficiencies Measured on 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Transport Efficiency for 21 May 2008 10:27:52 File: DFF025				
Start Sequence:		135	361	
End Sequence:		207	432	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Dichloroethene	96/61	2526.6	2596.4	102.8
Dichloroethene	98/61	903.6	947.2	104.8
Average Dichloroethene Transport Efficiency:				103.8
Trichloroethene	130/95	4857.7	4768.9	98.2
Trichloroethene	132/95	1594.9	1582.8	99.2
Trichloroethene	132/97	3096.2	3045.8	98.4
Average Trichloroethene Transport Efficiency:				98.6
Tetrachloroethene	164/129	3760.5	3824.3	101.7
Tetrachloroethene	166/129	1308.6	1318.1	100.7
Tetrachloroethene	166/131	3668.1	3691.7	100.6
Average Tetrachloroethene Transport Efficiency:				101.0

Transport Efficiency for 21 May 2008 17:48:31 File: DFF030				
Start Sequence:		148	406	
End Sequence:		230	478	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Dichloroethene	96/61	2281.0	2233.6	97.9
Dichloroethene	98/61	829.5	824.4	99.4
Average Dichloroethene Transport Efficiency:				98.7
Trichloroethene	130/95	4433.5	4194.7	94.6
Trichloroethene	132/95	1542.7	1492.5	96.7
Trichloroethene	132/97	3011.6	2878.4	95.6
Average Trichloroethene Transport Efficiency:				95.6
Tetrachloroethene	164/129	3963.7	3793.6	95.7
Tetrachloroethene	166/129	1397.6	1314.8	94.1
Tetrachloroethene	166/131	3884.7	3675.1	94.6
Average Tetrachloroethene Transport Efficiency:				94.8

PM/DM = Parent mass/Daughter mass
icps = Ion counts per second
% = Percent

TABLE 1 (continued)
Summary of Transport Efficiencies Measured on 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Transport Efficiency for 22 May 2008 08:29:05 File: DFF032				
Start Sequence:		104	305	
End Sequence:		175	375	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Dichloroethene	96/61	3016.3	2994.2	99.3
Dichloroethene	98/61	1068.8	1051.8	98.4
Average Dichloroethene Transport Efficiency:				98.8
Trichloroethene	130/95	4623.6	4480.8	96.9
Trichloroethene	132/95	1577.6	1491.5	94.5
Trichloroethene	132/97	3069.0	2969.6	96.8
Average Trichloroethene Transport Efficiency:				96.1
Tetrachloroethene	164/129	3960.1	3847.6	97.2
Tetrachloroethene	166/129	1513.1	1484.2	98.1
Tetrachloroethene	166/131	4398.5	4244.9	96.5
Average Tetrachloroethene Transport Efficiency:				97.3

Transport Efficiency for 22 May 2008 16:49:56 File: DFF040				
Start Sequence:		89	349	
End Sequence:		159	424	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Dichloroethene	96/61	3035.9	2877.8	94.8
Dichloroethene	98/61	1151.8	1080.4	93.8
Average Dichloroethene Transport Efficiency:				94.3
Trichloroethene	130/95	5002.7	4715.3	94.3
Trichloroethene	132/95	1597.5	1496.2	93.7
Trichloroethene	132/97	3165.6	2987.4	94.4
Average Trichloroethene Transport Efficiency:				94.1
Tetrachloroethene	164/129	4217.6	4032.6	95.6
Tetrachloroethene	166/129	1590.3	1567.6	98.6
Tetrachloroethene	166/131	4791.4	4599.9	96.0
Average Tetrachloroethene Transport Efficiency:				96.7

PM/DM = Parent mass/Daughter mass
icps = Ion counts per second
% = Percent

TABLE 2
Summary of Meteorological Conditions during Monitoring
20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Date	File	Ws Avg	Wd Avg	Precipitation (inches).	Atmospheric Pressure (in Hg)
5/20/2008	DFF003	CALM	CALM	0	29.08
5/20/2008	DFF004	6 ⁽¹⁾	220 ⁽¹⁾	0	29.07
5/20/2008	DFF005	8 ⁽²⁾	255 ⁽²⁾	0	29.07
5/20/2008	DFF006	3	340	0	29.08
5/20/2008	DFF007	5 ⁽³⁾	35 ⁽³⁾	0	29.09
5/20/2008	DFF008	6	60	0	29.09
5/20/2008	DFF010	9	70	0	29.07
5/20/2008	DFF011	9	60	0	29.06
5/20/2008	DFF012	10	30	0	29.05
5/20/2008	DFF013	11	40	0	29.04
5/20/2008	DFF015	8	50	0	29.03
5/20/2008	DFF016	7	60	0	29.04
5/20/2008	DFF017	7	60	0	29.04
5/20/2008	DFF018	7	50	0	29.05
5/21/2008	DFF026	11	130	0	28.99
5/21/2008	DFF027	11	130	0	28.99
5/21/2008	DFF028	16	150	0	28.86
5/22/2008	DFF033	15 ⁽⁴⁾	160 ⁽⁴⁾	0	28.83
5/22/2008	DFF034	16	160	0	28.82
5/22/2008	DFF036	17	170	0	28.82
5/22/2008	DFF037	23	160	0	28.79
5/22/2008	DFF038	16	160	0	28.77

The wind direction is the direction from which the wind is blowing.

Ws = Wind speed in miles per hour

Wd = Wind direction in degrees

(1) = Vector average of 0903 and 0925 observations (Appendix B)

(2) = Vector average of 0925 and 0953 observations (Appendix B)

(3) = Wind direction interpolated from VR (Appendix B)

(4) = Vector average of 0901, 0924 and 0934 observations (Appendix B)

TABLE 3
Summary of Response Factors and Error Bars for 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Calibration Files: DFF001 and DFF009 on 20 May 2008 Used for Survey Files: DFF003 to DFF008					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Dichloroethene	96/61	532.78	670.25	593.66	11.4
Dichloroethene	98/61	184.75	227.59	203.94	10.4
Average:					11.
Trichloroethene	130/95	1055.1	1343.7	1182.0	12.0
Trichloroethene	132/95	344.56	422.46	379.55	10.2
Trichloroethene	132/97	616.64	759.54	680.67	10.4
Average:					11.
Tetrachloroethene	164/129	566.63	626.44	595.03	5.01
Tetrachloroethene	166/129	262.62	338.97	295.95	12.7
Tetrachloroethene	166/131	696.72	904.50	787.13	13.0
Average:					10.

Calibration Files: DFF009 and DFF014 on 20 May 2008 Used for Survey Files: DFF010 to DFF013					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Dichloroethene	96/61	670.25	619.32	643.78	3.95
Dichloroethene	98/61	227.59	215.87	221.58	2.64
Average:					3.3
Trichloroethene	130/95	1343.7	1301.4	1322.2	1.60
Trichloroethene	132/95	422.46	392.56	406.96	3.67
Trichloroethene	132/97	759.54	712.99	735.53	3.16
Average:					2.8
Tetrachloroethene	164/129	626.44	501.06	556.78	11.1
Tetrachloroethene	166/129	338.97	316.03	327.10	3.50
Tetrachloroethene	166/131	904.50	857.76	880.51	2.65
Average:					5.8

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 3 (continued)
Summary of Response Factors and Error Bars for 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Calibration Files: DFF014 and DFF019 on 20 May 2008 Used for Survey Files: DFF015 to DFF018 and DFF021					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Dichloroethene	96/61	619.32	533.61	573.28	7.43
Dichloroethene	98/61	215.87	189.42	201.78	6.53
Average:					7.0
Trichloroethene	130/95	1301.4	1077.3	1178.8	9.42
Trichloroethene	132/95	392.56	339.52	364.12	7.24
Trichloroethene	132/97	712.99	613.39	659.45	7.51
Average:					8.1
Tetrachloroethene	164/129	501.06	594.22	543.68	8.51
Tetrachloroethene	166/129	316.03	319.03	317.52	0.472
Tetrachloroethene	166/131	857.76	855.03	856.39	0.159
Average:					3.0

Calibration Files: DFF024 and DFF029 on 21 May 2008 Used for Survey Files: DFF026, DFF027, and DFF028					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Dichloroethene	96/61	386.81	322.41	351.69	9.08
Dichloroethene	98/61	136.22	117.09	125.93	7.55
Average:					8.3
Trichloroethene	130/95	749.12	645.14	693.25	7.46
Trichloroethene	132/95	248.28	231.03	239.35	3.60
Trichloroethene	132/97	475.76	444.99	459.86	3.34
Average:					4.8
Tetrachloroethene	164/129	617.85	618.19	618.02	0.0282
Tetrachloroethene	166/129	216.73	213.85	215.28	0.668
Tetrachloroethene	166/131	595.52	595.98	595.75	0.0388
Average:					0.24

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 3 (continued)
Summary of Response Factors and Error Bars for 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Calibration Files: DFF031 and DFF039 on 22 May 2008 Used for Survey Files: DFF033 to DFF038					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Dichloroethene	96/61	432.33	390.52	410.36	5.08
Dichloroethene	98/61	154.62	148.52	151.51	2.01
Average:					3.5
Trichloroethene	130/95	709.09	683.11	695.86	1.87
Trichloroethene	132/95	246.77	229.08	237.60	3.72
Trichloroethene	132/97	481.31	446.17	463.08	3.79
Average:					3.1
Tetrachloroethene	164/129	701.65	671.50	686.24	2.20
Tetrachloroethene	166/129	258.46	254.12	256.27	0.846
Tetrachloroethene	166/131	738.80	728.80	733.77	0.681
Average:					1.2

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 4
Summary of Detection and Quantitation Limit Data for 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Calibration Files: DFF001 and DFF009 on 20 May 2008 Used for Survey Files: DFF003 to DFF008					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Dichloroethene	96/61	593.66	4.1111	0.0208	0.0693
Dichloroethene	98/61	203.94	6.2408	0.0918	0.306
Average:				0.056	0.19
Trichloroethene	130/95	1182.0	9.8184	0.0249	0.0831
Trichloroethene	132/95	379.55	6.4625	0.0511	0.170
Trichloroethene	132/97	680.67	3.8124	0.0168	0.0560
Average:				0.031	0.10
Tetrachloroethene	164/129	595.03	6.7003	0.0338	0.113
Tetrachloroethene	166/129	295.95	4.8912	0.0496	0.165
Tetrachloroethene	166/131	787.13	7.0711	0.0270	0.0898
Average:				0.037	0.12

Calibration Files: DFF009 and DFF014 on 20 May 2008 Used for Survey Files: DFF010 to DFF013					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Dichloroethene	96/61	643.78	5.2847	0.0246	0.0821
Dichloroethene	98/61	221.58	5.2002	0.0704	0.235
Average:				0.048	0.16
Trichloroethene	130/95	1322.2	24.363	0.0553	0.184
Trichloroethene	132/95	406.96	13.509	0.0996	0.332
Trichloroethene	132/97	735.53	15.440	0.0630	0.210
Average:				0.073	0.24
Tetrachloroethene	164/129	556.78	13.296	0.0716	0.239
Tetrachloroethene	166/129	327.10	14.579	0.134	0.446
Tetrachloroethene	166/131	880.51	27.969	0.0953	0.318
Average:				0.10	0.33

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

TABLE 4 (continued)
Summary of Detection and Quantitation Limit Data for 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Calibration Files: DFF014 and DFF019 on 20 May 2008 Used for Survey Files: DFF015 to DFF018 and DFF021					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Dichloroethene	96/61	573.28	5.2612	0.0275	0.0918
Dichloroethene	98/61	201.78	5.0969	0.0758	0.253
Average:				0.052	0.17
Trichloroethene	130/95	1178.8	11.313	0.0288	0.0960
Trichloroethene	132/95	364.12	8.8767	0.0731	0.244
Trichloroethene	132/97	659.45	6.9201	0.0315	0.105
Average:				0.044	0.15
Tetrachloroethene	164/129	543.68	5.4744	0.0302	0.101
Tetrachloroethene	166/129	317.52	5.3074	0.0501	0.167
Tetrachloroethene	166/131	856.39	9.9608	0.0349	0.116
Average:				0.038	0.13

Calibration File: DFF022 at 09:00:23 on 21 May 2008 Used for Survey File: DFF023					
Compound	PM/DM	Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Dichloroethene	96/61	374.11	3.8950	0.0312	0.104
Dichloroethene	98/61	130.79	5.6526	0.130	0.432
Average:				0.080	0.27
Trichloroethene	130/95	714.95	9.9395	0.0417	0.139
Trichloroethene	132/95	236.03	4.3582	0.0554	0.185
Trichloroethene	132/97	455.55	3.0023	0.0198	0.0659
Average:				0.039	0.13
Tetrachloroethene	164/129	580.21	8.7762	0.0454	0.151
Tetrachloroethene	166/129	202.18	5.6561	0.0839	0.280
Tetrachloroethene	166/131	560.44	10.193	0.0546	0.182
Average:				0.061	0.20

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

TABLE 4 (continued)
Summary of Detection and Quantitation Limit Data for 20 May through 22 May 2008
Delfasco Forge Site
Grand Prairie, Texas
July 2008

Calibration Files: DFF024 and DFF029 on 21 May 2008 Used for Survey Files: DFF026, DFF027, and DFF028					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Dichloroethene	96/61	351.69	3.7294	0.0318	0.106
Dichloroethene	98/61	125.93	7.9501	0.189	0.631
Average:				0.11	0.37
Trichloroethene	130/95	693.25	6.3772	0.0276	0.0920
Trichloroethene	132/95	239.35	5.9930	0.0751	0.250
Trichloroethene	132/97	459.86	3.3304	0.0217	0.0724
Average:				0.041	0.14
Tetrachloroethene	164/129	618.02	8.5534	0.0415	0.138
Tetrachloroethene	166/129	215.28	5.0176	0.0699	0.233
Tetrachloroethene	166/131	595.75	7.4220	0.0374	0.125
Average:				0.050	0.17

Calibration Files: DFF031 and DFF039 on 22 May 2008 Used for Survey Files: DFF033 to DFF038					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Dichloroethene	96/61	410.36	5.0969	0.0373	0.124
Dichloroethene	98/61	151.51	5.4223	0.107	0.358
Average:				0.072	0.24
Trichloroethene	130/95	695.86	7.3158	0.0315	0.105
Trichloroethene	132/95	237.60	5.3661	0.0678	0.226
Trichloroethene	132/97	463.08	5.9668	0.0387	0.129
Average:				0.046	0.15
Tetrachloroethene	164/129	686.24	10.208	0.0446	0.149
Tetrachloroethene	166/129	256.27	8.2175	0.0962	0.321
Tetrachloroethene	166/131	733.77	10.714	0.0438	0.146
Average:				0.062	0.21

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

FIGURES

DRAFT

DRAFT

Figure 1a

TAGA File Event Summary File: DFF003 Acquired on 20 May 2008 at 08:17:53 Title: Unit 002 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	152	Start of the pre-entry ambient
B	3.2	225	End of the pre-entry ambient
C	5.2	372	Entering the unit
D	6.4	454	Start of the bathroom
E	7.4	526	End of the bathroom
F	7.9	561	Start of the crawl space
G	8.9	632	End of the crawl space
H	10.5	746	Start of the closet with hatch
I	11.6	819	End of the closet with hatch
J	13.1	929	Exiting the unit
K	13.5	957	Start of the post-exit ambient
L	14.5	1029	End of the post-exit ambient
M	16.6	1173	Start of the 30 mL/min spike
N	17.6	1245	End of the 30 mL/min spike

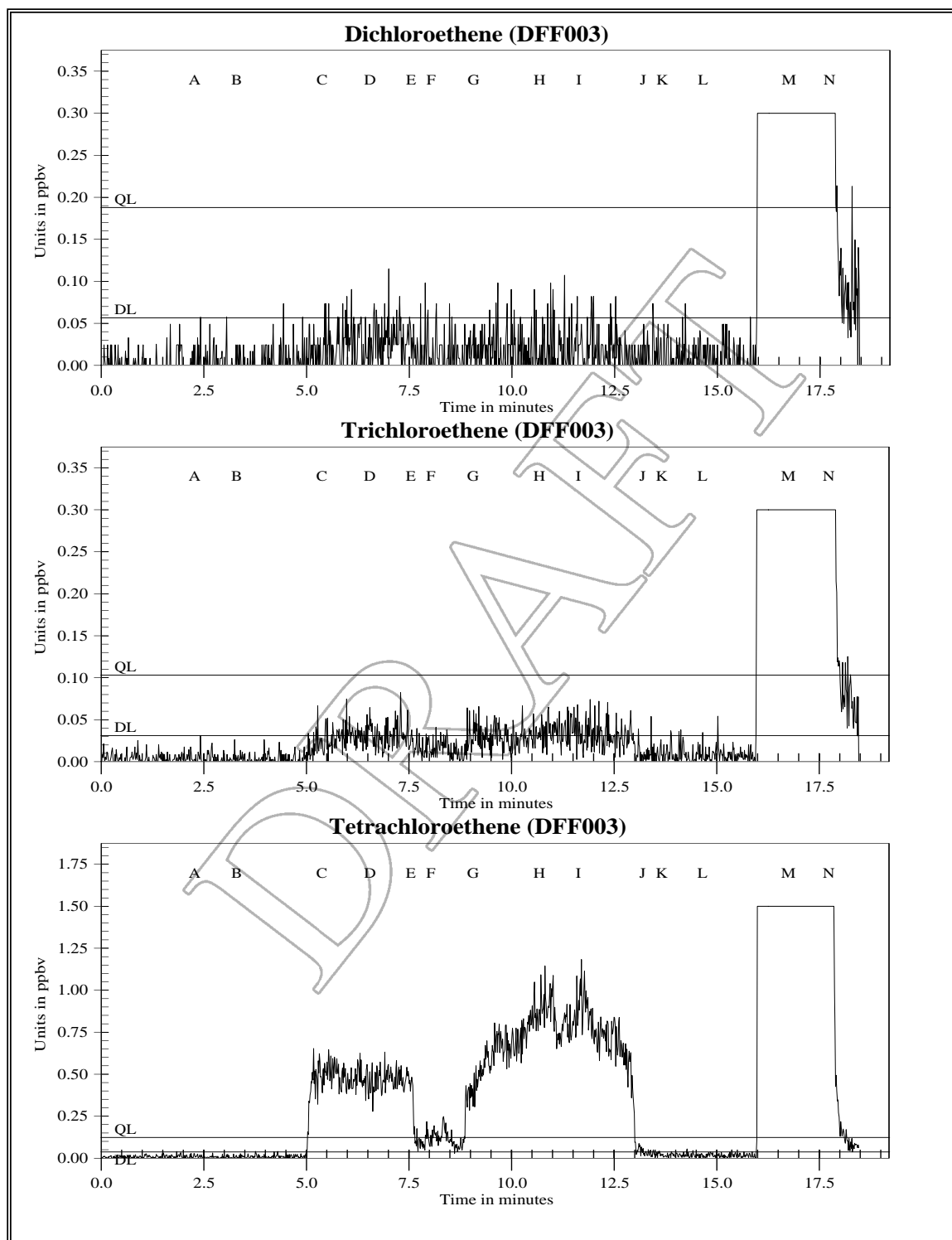


Figure 1b Unit 002 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 1c

TAGA Target Compound Summary for Unit 002 Preliminary Survey File: DFF003 Acquired on 20 May 2008 at 08:17:53				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.056	0.031	0.037
Quantitation Limits - QL:		0.19	0.10	0.12
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.056	DL=0.031	DL=0.037
D - E	Bathroom	DL=0.056	0.032J	0.47
F - G	Crawl space	DL=0.056	DL=0.031	0.13
H - I	Closet with hatch	DL=0.056	0.036J	0.84
K - L	Post-exit ambient	DL=0.056	DL=0.031	DL=0.037
M - N	30 mL/min spike	6.5	5.9	6.3

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 2a

TAGA File Event Summary File: DFF004 Acquired on 20 May 2008 at 08:58:56 Title: Unit 003 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.2	155	Start of the pre-entry ambient
B	3.2	226	End of the pre-entry ambient
C	7.4	523	Entering the unit
D	8.4	595	Start of the closet with a hatch
E	9.4	669	End of the closet with a hatch
F	9.8	697	Start of the crawl space
G	10.9	770	End of the crawl space
H	11.5	811	Start of the dry cleaning bag
I	12.5	885	End of the dry cleaning bag
J	13.0	918	Exiting the unit
K	14.0	993	Start of the post-exit ambient
L	15.1	1066	End of the post-exit ambient
M	16.3	1156	Start of the 30 mL/min spike
N	17.4	1233	End of the 30 mL/min spike

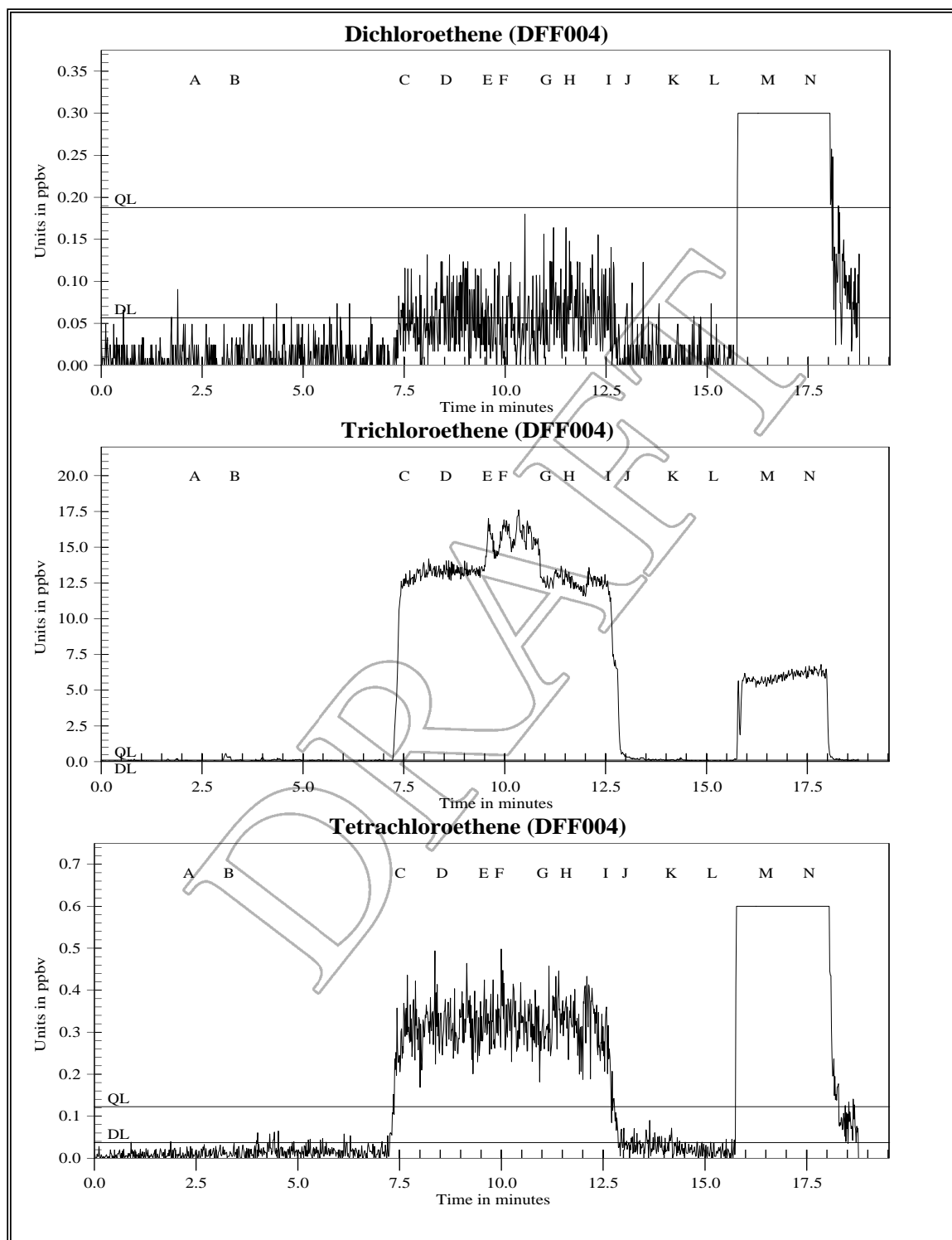


Figure 2b Unit 003 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 2c

TAGA Target Compound Summary for Unit 003 Preliminary Survey File: DFF004 Acquired on 20 May 2008 at 08:58:56				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.056	0.031	0.037
Quantitation Limits - QL:		0.19	0.10	0.12
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.056	0.10J	DL=0.037
D - E	Closet with a hatch	0.065J	13.	0.32
F - G	Crawl space	DL=0.056	16.	0.33
H - I	Dry cleaning bag	0.066J	13.	0.32
K - L	Post-exit ambient	DL=0.056	0.10J	DL=0.037
M - N	30 mL/min spike	7.1	5.9	6.1

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

Figure 3a

TAGA File Event Summary File: DFF005 Acquired on 20 May 2008 at 09:39:20 Title: Unit 004 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	4.4	311	Start of the pre-entry ambient
B	5.8	411	End of the pre-entry ambient
C	8.4	595	Start of the crawl space
D	9.4	668	End of the crawl space
E	12.1	856	Start of the post-exit ambient
F	14.0	992	End of the post-exit ambient
G	17.5	1240	Start of the 30 mL/min spike
H	18.5	1311	End of the 30 mL/min spike

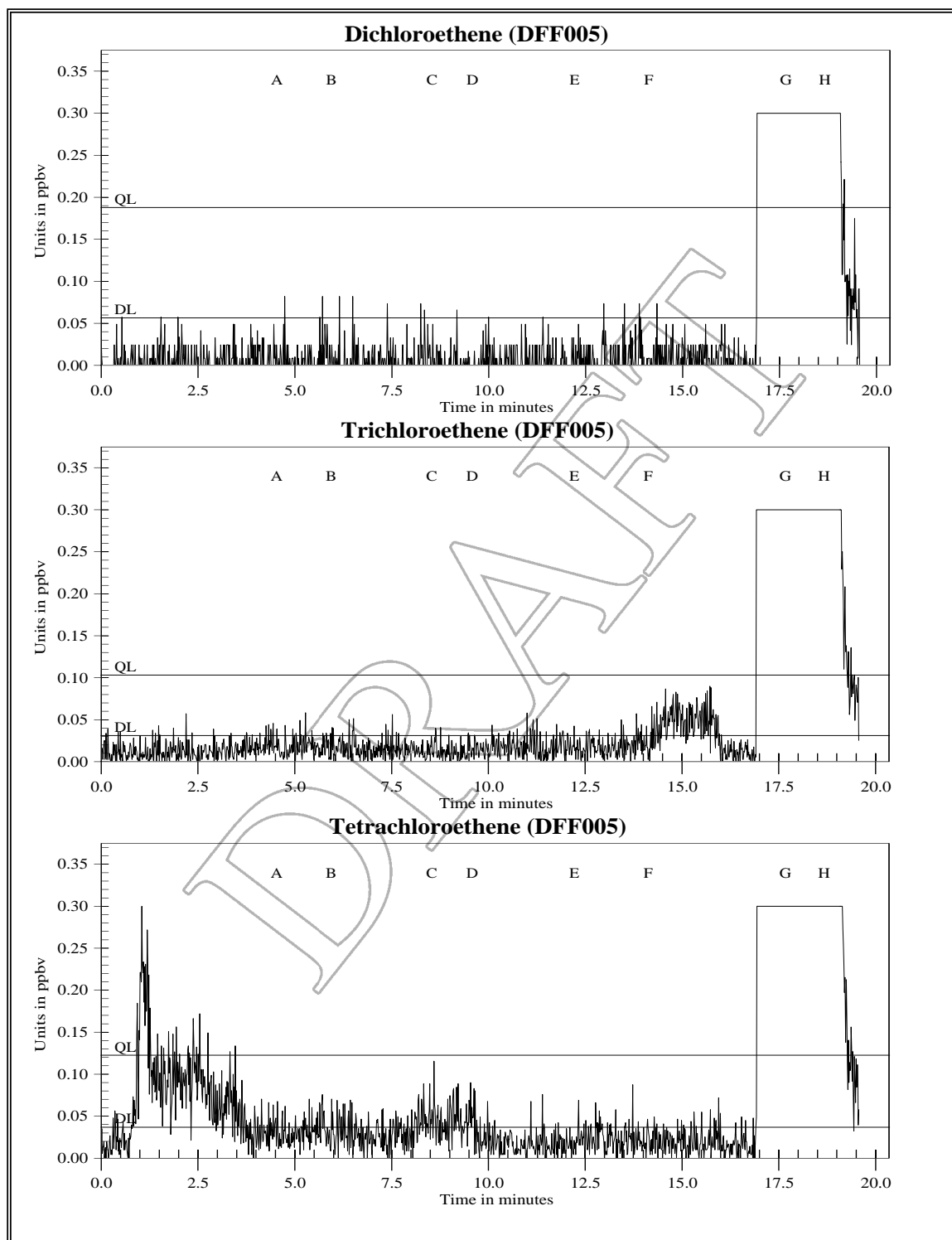


Figure 3b Unit 004 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 3c

TAGA Target Compound Summary for Unit 004 Preliminary Survey File: DFF005 Acquired on 20 May 2008 at 09:39:20				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.056	0.031	0.037
Quantitation Limits - QL:		0.19	0.10	0.12
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.056	DL=0.031	DL=0.037
C - D	Crawl space	DL=0.056	DL=0.031	0.044J
E - F	Post-exit ambient	DL=0.056	DL=0.031	DL=0.037
G - H	30 mL/min spike	6.9	6.0	5.7

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 4a

TAGA File Event Summary File: DFF006 Acquired on 20 May 2008 at 10:28:18 Title: Unit 005 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.0	145	Start of the pre-entry ambient
B	3.1	218	End of the pre-entry ambient
C	4.5	322	Entering the unit
D	5.2	368	Start of the closet with a hatch
E	6.2	440	End of the closet with a hatch
F	6.7	475	Start of the crawl space
G	7.7	548	End of the crawl space
H	8.2	580	Exiting the unit
I	9.2	652	Start of the post-exit ambient
J	10.2	723	End of the post-exit ambient
K	11.5	817	Start of the 30 mL/min spike
L	12.7	902	End of the 30 mL/min spike

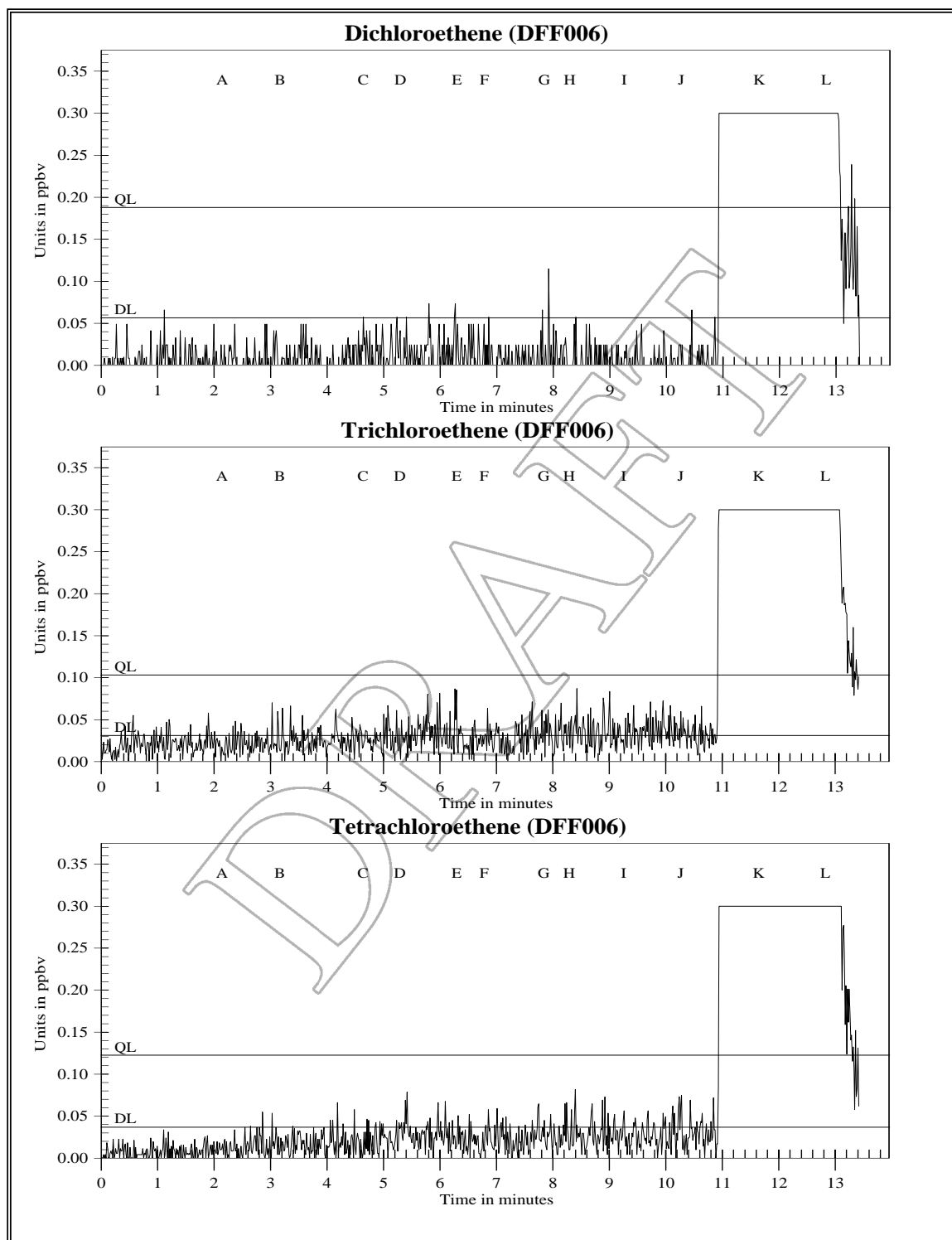


Figure 4b Unit 005 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 4c

TAGA Target Compound Summary for Unit 005 Preliminary Survey File: DFF006 Acquired on 20 May 2008 at 10:28:18				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.056	0.031	0.037
Quantitation Limits - QL:		0.19	0.10	0.12
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.056	DL=0.031	DL=0.037
D - E	Closet with a hatch	DL=0.056	0.032J	DL=0.037
F - G	Crawl space	DL=0.056	DL=0.031	DL=0.037
I - J	Post-exit ambient	DL=0.056	0.035J	DL=0.037
K - L	30 mL/min spike	7.7	6.8	6.3

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 5a

TAGA File Event Summary File: DFF007 Acquired on 20 May 2008 at 11:03:17 Title: Unit 006 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	152	Start of the pre-entry ambient
B	3.1	221	End of the pre-entry ambient
C	5.9	415	Entering the unit
D	7.1	503	Start of the closet
E	8.1	575	End of the closet
F	9.0	639	Start of the crawl space
G	10.0	710	End of the crawl space
H	10.9	772	Exiting the unit
I	11.5	811	Start of the post-exit ambient
J	12.7	902	End of the post-exit ambient
K	13.8	980	Start of the 30 mL/min spike
L	14.9	1054	End of the 30 mL/min spike

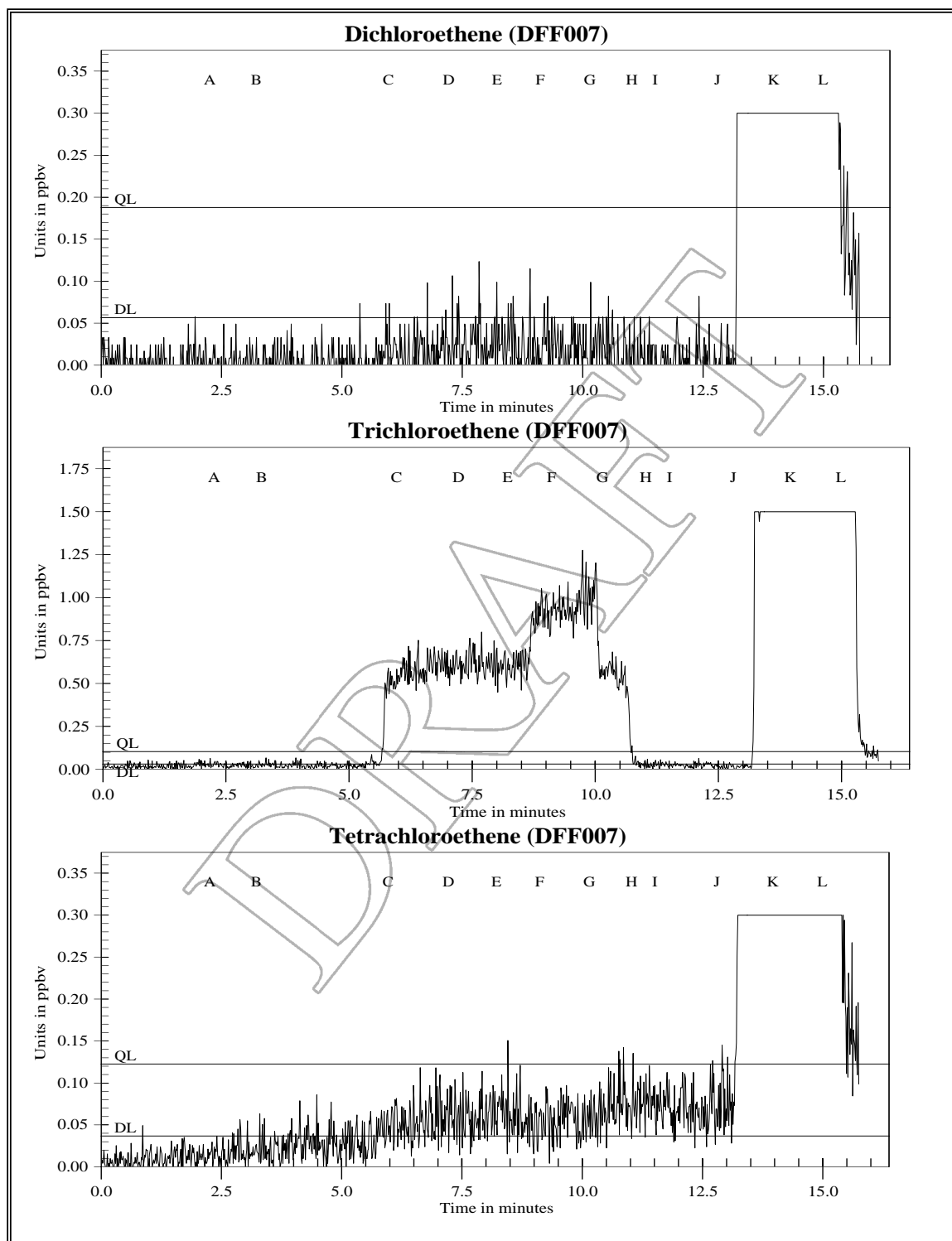


Figure 5b Unit 006 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 5c

TAGA Target Compound Summary for Unit 006 Preliminary Survey File: DFF007 Acquired on 20 May 2008 at 11:03:17				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.056	0.031	0.037
Quantitation Limits - QL:		0.19	0.10	0.12
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.056	DL=0.031	DL=0.037
D - E	Closet	DL=0.056	0.61	0.060J
F - G	Crawl space	DL=0.056	0.96	0.056J
I - J	Post-exit ambient	DL=0.056	DL=0.031	0.071J
K - L	30 mL/min spike	7.5	6.7	6.2

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 6a

TAGA File Event Summary File: DFF008 Acquired on 20 May 2008 at 11:48:18 Title: Unit 007 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	152	Start of the pre-entry ambient
B	3.2	227	End of the pre-entry ambient
C	5.6	395	Entering the unit
D	6.1	430	Start of the closet
E	7.1	502	End of the closet
F	7.4	526	Start of the crawl space
G	8.5	602	End of the crawl space
H	9.3	661	Exiting the unit
I	9.9	704	Start of the post-exit ambient
J	11.1	783	End of the post-exit ambient
K	12.3	868	Start of the 30 mL/min spike
L	13.4	950	End of the 30 mL/min spike

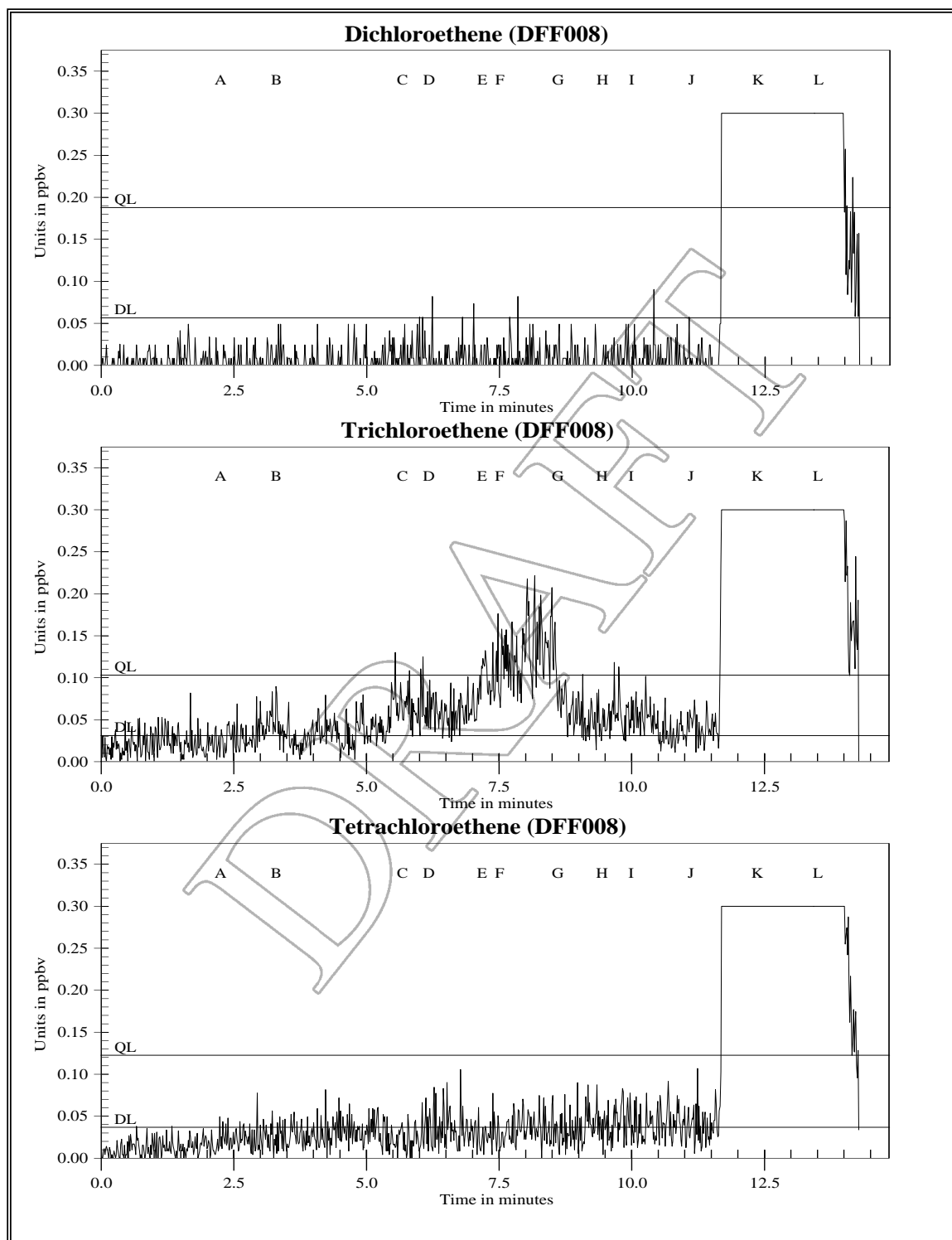


Figure 6b Unit 007 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 6c

TAGA Target Compound Summary for Unit 007 Preliminary Survey File: DFF008 Acquired on 20 May 2008 at 11:48:18				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.056	0.031	0.037
Quantitation Limits - QL:		0.19	0.10	0.12
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.056	0.031J	DL=0.037
D - E	Closet	DL=0.056	0.060J	DL=0.037
F - G	Crawl space	DL=0.056	0.13	DL=0.037
I - J	Post-exit ambient	DL=0.056	0.044J	0.040J
K - L	30 mL/min spike	7.3	6.4	5.3

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

Figure 7a

TAGA File Event Summary File: DFF010 Acquired on 20 May 2008 at 14:01:12 Title: Unit 008 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.2	153	Start of the pre-entry ambient
B	3.2	224	End of the pre-entry ambient
C	7.5	532	Entering the unit
D	8.0	566	Start of closet one
E	9.0	639	End of closet one
F	12.7	901	Start of hatch one
G	14.5	1030	End of hatch one
H	19.1	1352	Start of hatch two
I	20.3	1437	End of hatch two
J	21.3	1507	Exiting the unit
K	22.1	1564	Start of the post-exit ambient
L	23.1	1635	End of the post-exit ambient
M	24.2	1713	Start of the 30 mL/min spike
N	25.2	1783	End of the 30 mL/min spike

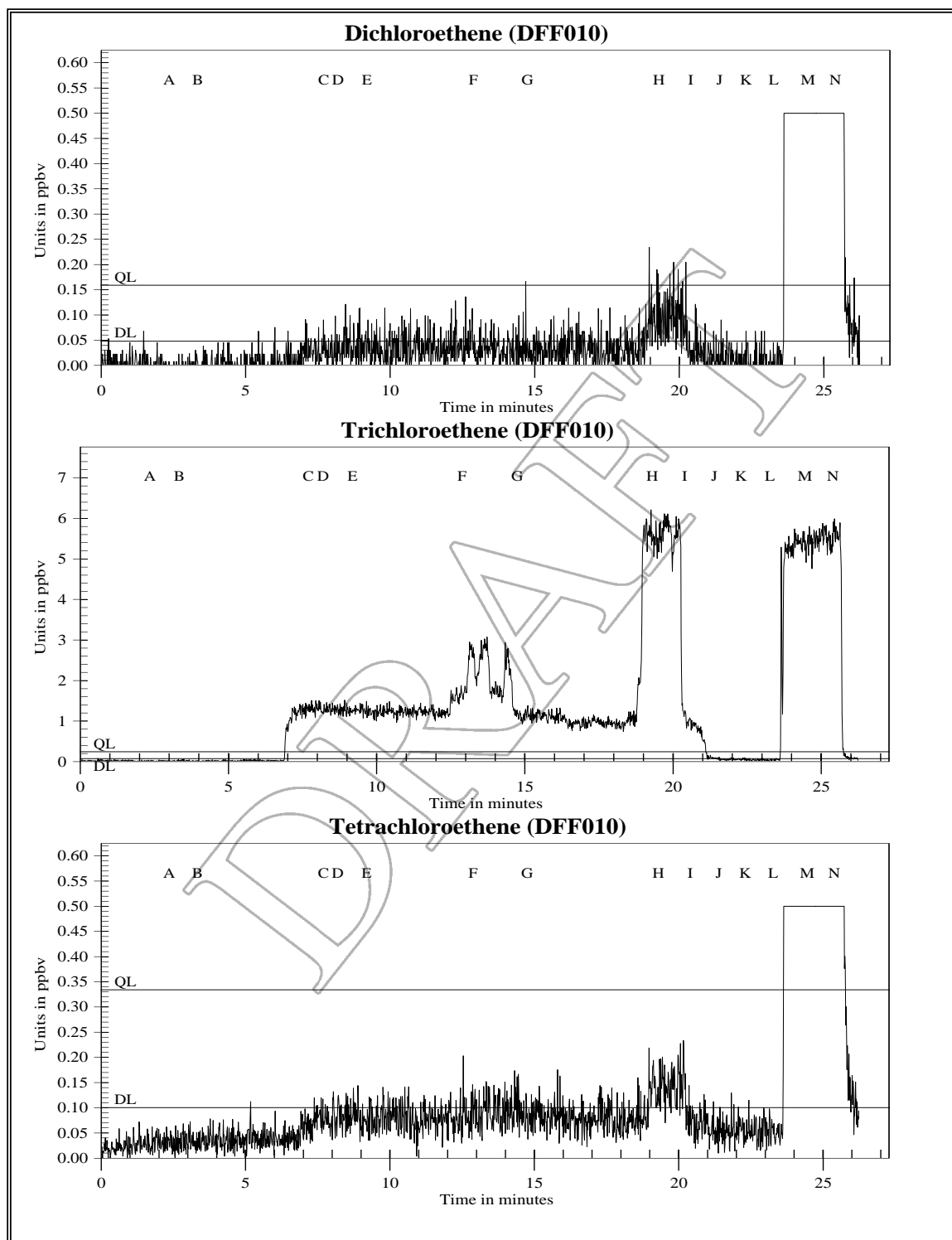


Figure 7b Unit 008 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 7c

TAGA Target Compound Summary for Unit 008 Preliminary Survey File: DFF010 Acquired on 20 May 2008 at 14:01:12				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.048	0.073	0.10
Quantitation Limits - QL:		0.16	0.24	0.33
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.048	DL=0.073	DL=0.10
D - E	Closet one	DL=0.048	1.3	DL=0.10
F - G	Hatch one	DL=0.048	2.1	DL=0.10
H - I	Hatch two	0.092J	5.5	0.14J
K - L	Post-exit ambient	DL=0.048	DL=0.073	DL=0.10
M - N	30 mL/min spike	6.1	5.5	6.0

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 8a

TAGA File Event Summary File: DFF011 Acquired on 20 May 2008 at 15:00:32 Title: Unit 009 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.4	171	Start of the pre-entry ambient
B	7.1	501	End of the pre-entry ambient
C	12.0	849	Start of the crawl space
D	13.2	938	End of the crawl space
E	15.6	1107	Entering the unit
F	17.0	1202	Start of the living room
G	18.0	1274	End of the living room
H	18.3	1298	Start edge of the living room hatch
I	19.4	1370	End edge of the living room hatch
J	19.6	1386	Exiting the unit
K	20.1	1426	Start of the post-exit ambient
L	21.5	1525	End of the post-exit ambient
M	22.7	1609	Start of the 30 mL/min spike
N	23.8	1688	End of the 30 mL/min spike

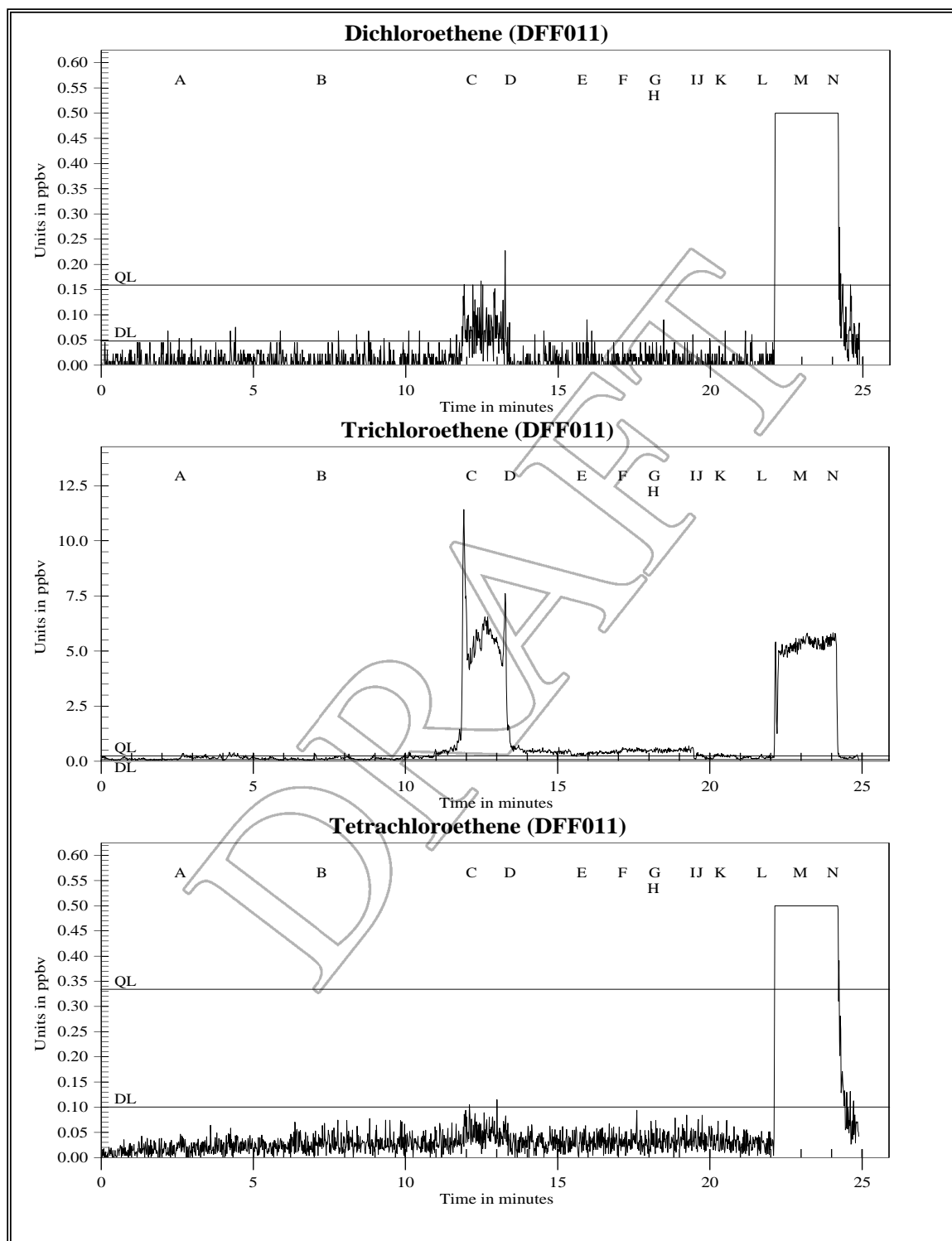


Figure 8b Unit 009 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 8c

TAGA Target Compound Summary for Unit 009 Preliminary Survey File: DFF011 Acquired on 20 May 2008 at 15:00:32				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.048	0.073	0.10
Quantitation Limits - QL:		0.16	0.24	0.33
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.048	0.15J	DL=0.10
C - D	Crawl space	0.071J	5.4	DL=0.10
F - G	Living room	DL=0.048	0.50	DL=0.10
H - I	Edge of the living room hatch	DL=0.048	0.50	DL=0.10
K - L	Post-exit ambient	DL=0.048	0.20J	DL=0.10
M - N	30 mL/min spike	5.9	5.4	5.3

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 9a

TAGA File Event Summary File: DFF012 Acquired on 20 May 2008 at 16:04:56 Title: Unit 010 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	152	Start of the pre-entry ambient
B	3.4	240	End of the pre-entry ambient
C	7.8	556	Entering the unit
D	8.4	595	Start of the closet
E	9.4	667	End of the closet
F	9.9	704	Start of the crawl space
G	11.0	778	End of the crawl space
H	11.9	842	Exiting the unit
I	13.0	918	Start of the post-exit ambient
J	14.0	991	End of the post-exit ambient
K	15.1	1068	Start of the 30 mL/min spike
L	16.3	1151	End of the 30 mL/min spike

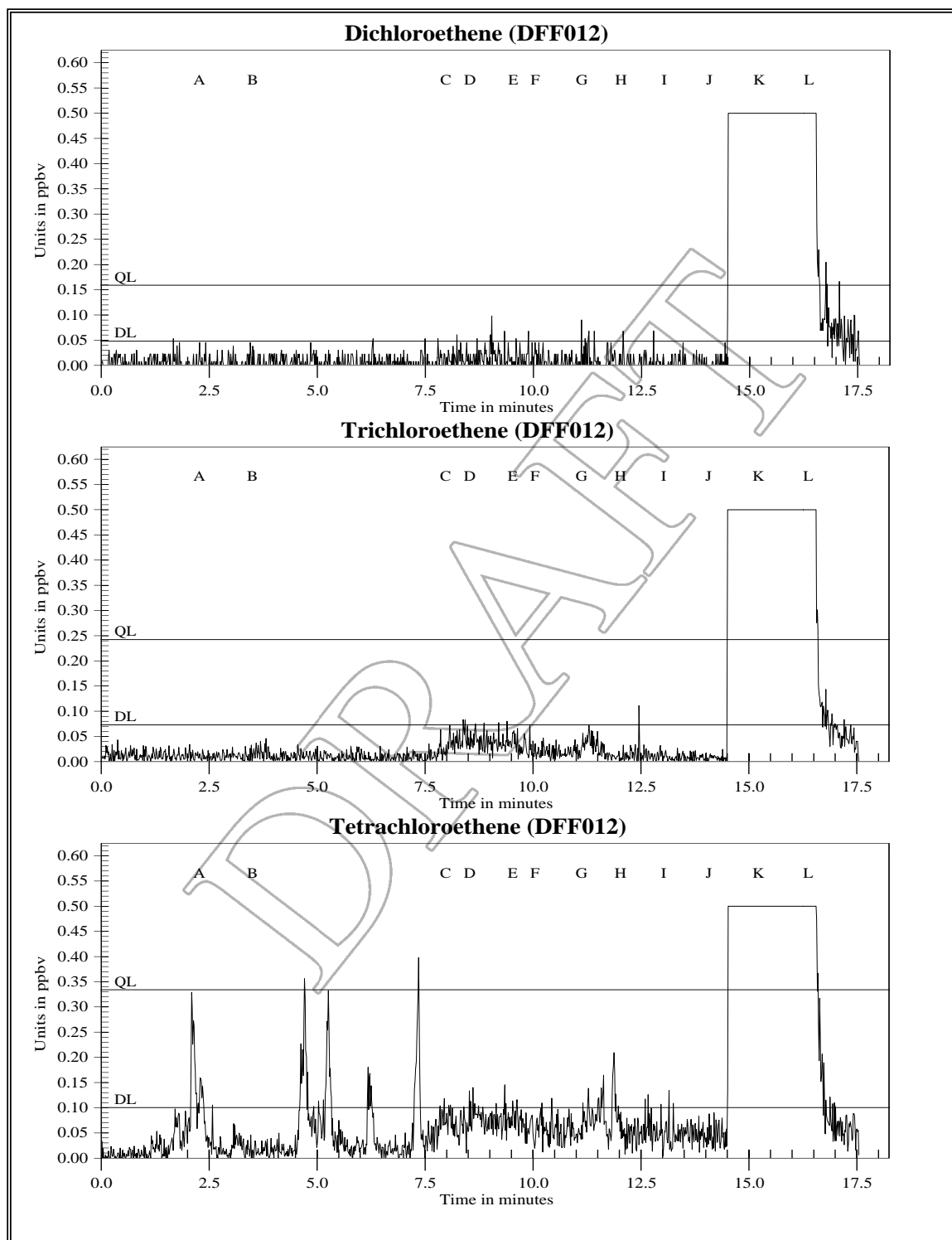


Figure 9b Unit 010 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 9c

TAGA Target Compound Summary for Unit 010 Preliminary Survey File: DFF012 Acquired on 20 May 2008 at 16:04:56				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.048	0.073	0.10
Quantitation Limits - QL:		0.16	0.24	0.33
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.048	DL=0.073	DL=0.10
D - E	Closet	DL=0.048	DL=0.073	DL=0.10
F - G	Crawl space	DL=0.048	DL=0.073	DL=0.10
I - J	Post-exit ambient	DL=0.048	DL=0.073	DL=0.10
K - L	30 mL/min spike	6.1	5.6	5.4

Concentrations are given in parts per billion by volume

Figure 10a

TAGA File Event Summary File: DFF013 Acquired on 20 May 2008 at 16:53:15 Title: Unit 011 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	147	Start of the pre-entry ambient
B	3.1	217	End of the pre-entry ambient
C	4.8	339	Entering the unit
D	5.3	376	Start of the closet
E	6.3	449	End of the closet
F	8.6	612	Start of the crawl space
G	12.3	868	End of the crawl space
H	14.7	1041	Exiting the unit
I	15.6	1103	Start of the post-exit ambient
J	16.6	1174	End of the post-exit ambient
K	17.9	1266	Start of the 30 mL/min spike
L	18.9	1336	End of the 30 mL/min spike

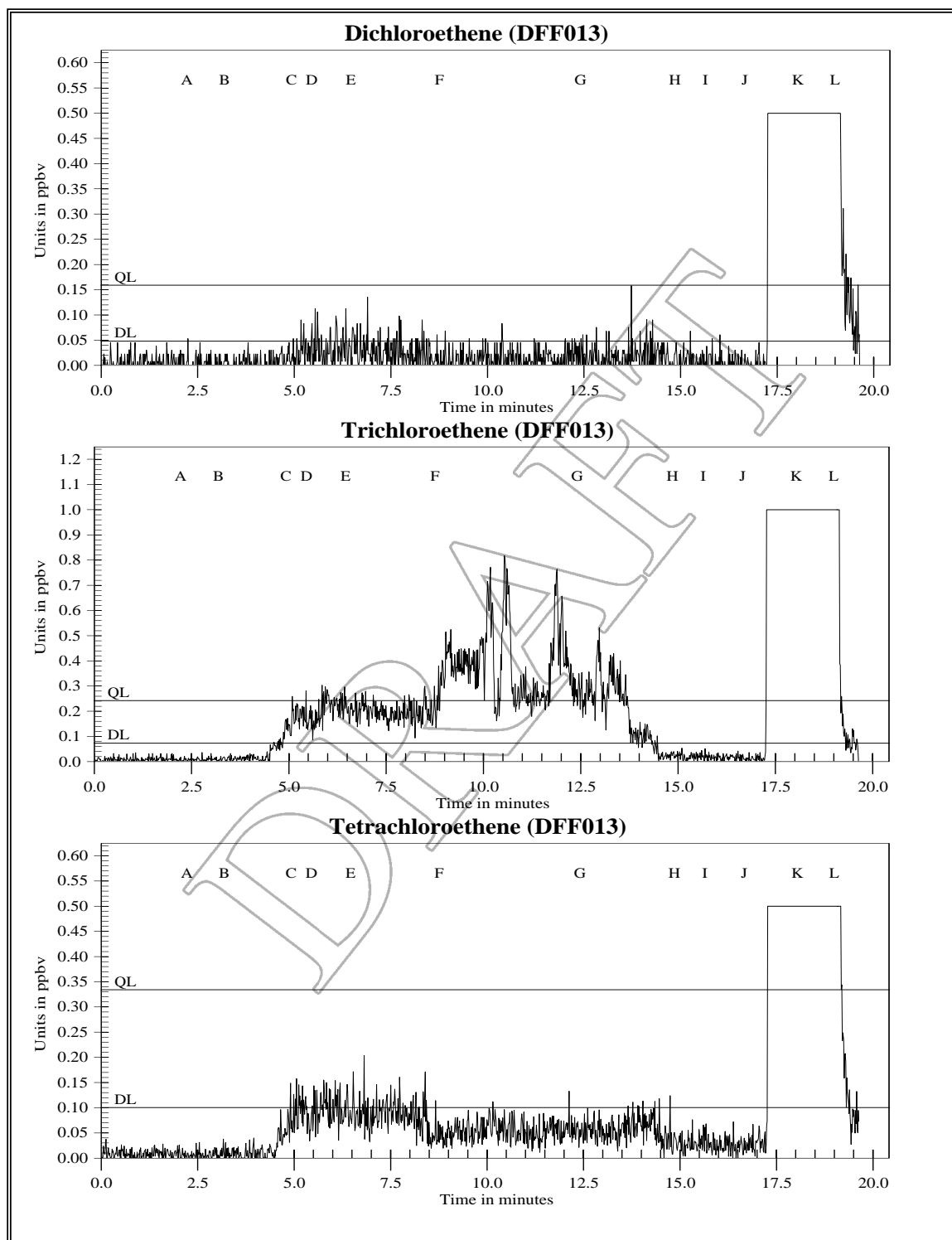


Figure 10b Unit 011 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 10c

TAGA Target Compound Summary for Unit 011 Preliminary Survey File: DFF013 Acquired on 20 May 2008 at 16:53:15				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.048	0.073	0.10
Quantitation Limits - QL:		0.16	0.24	0.33
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.048	DL=0.073	DL=0.10
D - E	Closet	DL=0.048	0.20J	DL=0.10
F - G	Crawl space	DL=0.048	0.38	DL=0.10
I - J	Post-exit ambient	DL=0.048	DL=0.073	DL=0.10
K - L	30 mL/min spike	7.1	6.1	5.4

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 11a

TAGA File Event Summary File: DFF015 Acquired on 20 May 2008 at 18:59:43 Title: Unit 012 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	148	Start of the pre-entry ambient
B	3.2	230	End of the pre-entry ambient
C	3.9	275	Entering the unit
D	6.2	437	Start of the closet
E	7.2	513	End of the closet
F	7.8	555	Start of the crawl space
G	8.9	628	End of the crawl space
H	9.0	640	Start of the crawl space
I	10.1	713	End of the crawl space
J	10.8	767	Exiting the unit
K	11.9	842	Start of the post-exit ambient
L	12.9	915	End of the post-exit ambient
M	14.1	996	Start of the 30 mL/min spike
N	15.6	1102	End of the 30 mL/min spike

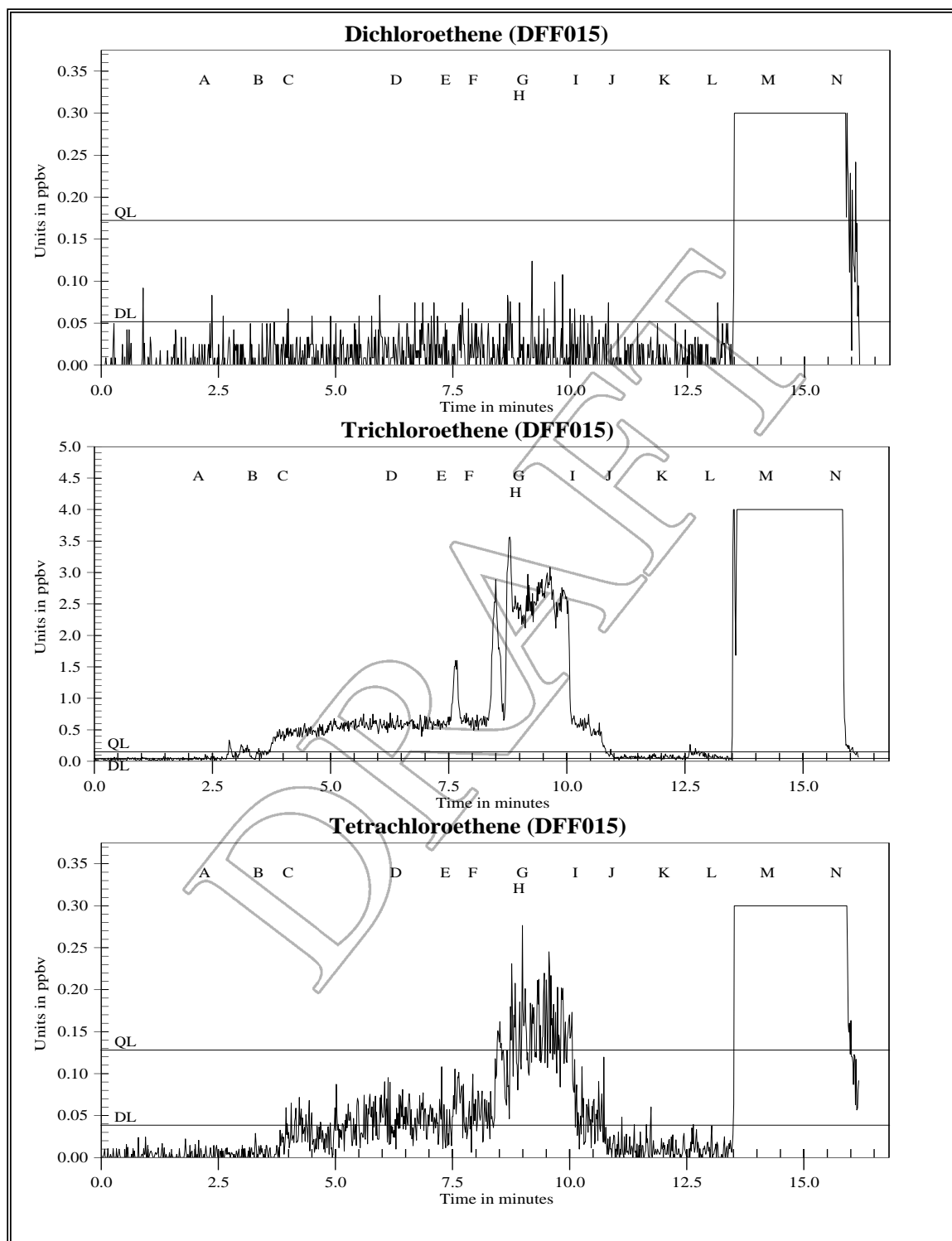


Figure 11b Unit 012 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 11c

TAGA Target Compound Summary for Unit 012 Preliminary Survey File: DFF015 Acquired on 20 May 2008 at 18:59:43				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.052	0.044	0.038
Quantitation Limits - QL:		0.17	0.15	0.13
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.052	0.088J	DL=0.038
D - E	Closet	DL=0.052	0.59	0.046J
F - G	Crawl space	DL=0.052	1.3	0.084J
H - I	Crawl space	DL=0.052	2.5	0.15
K - L	Post-exit ambient	DL=0.052	0.086J	DL=0.038
M - N	30 mL/min spike	7.2	6.7	5.3

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

Figure 12a

TAGA File Event Summary File: DFF016 Acquired on 20 May 2008 at 19:41:01 Title: Unit 013 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.4	172	Start of the pre-entry ambient
B	3.4	243	End of the pre-entry ambient
C	5.3	378	Entering the unit
D	5.8	414	Start of the closet
E	6.9	487	End of the closet
F	7.9	559	Start of the crawl space
G	8.9	628	End of the crawl space
H	9.5	674	Exiting the unit
I	10.0	707	Start of the post-exit ambient
J	11.0	778	End of the post-exit ambient
K	12.3	872	Start of the 30 mL/min spike
L	13.3	942	End of the 30 mL/min spike

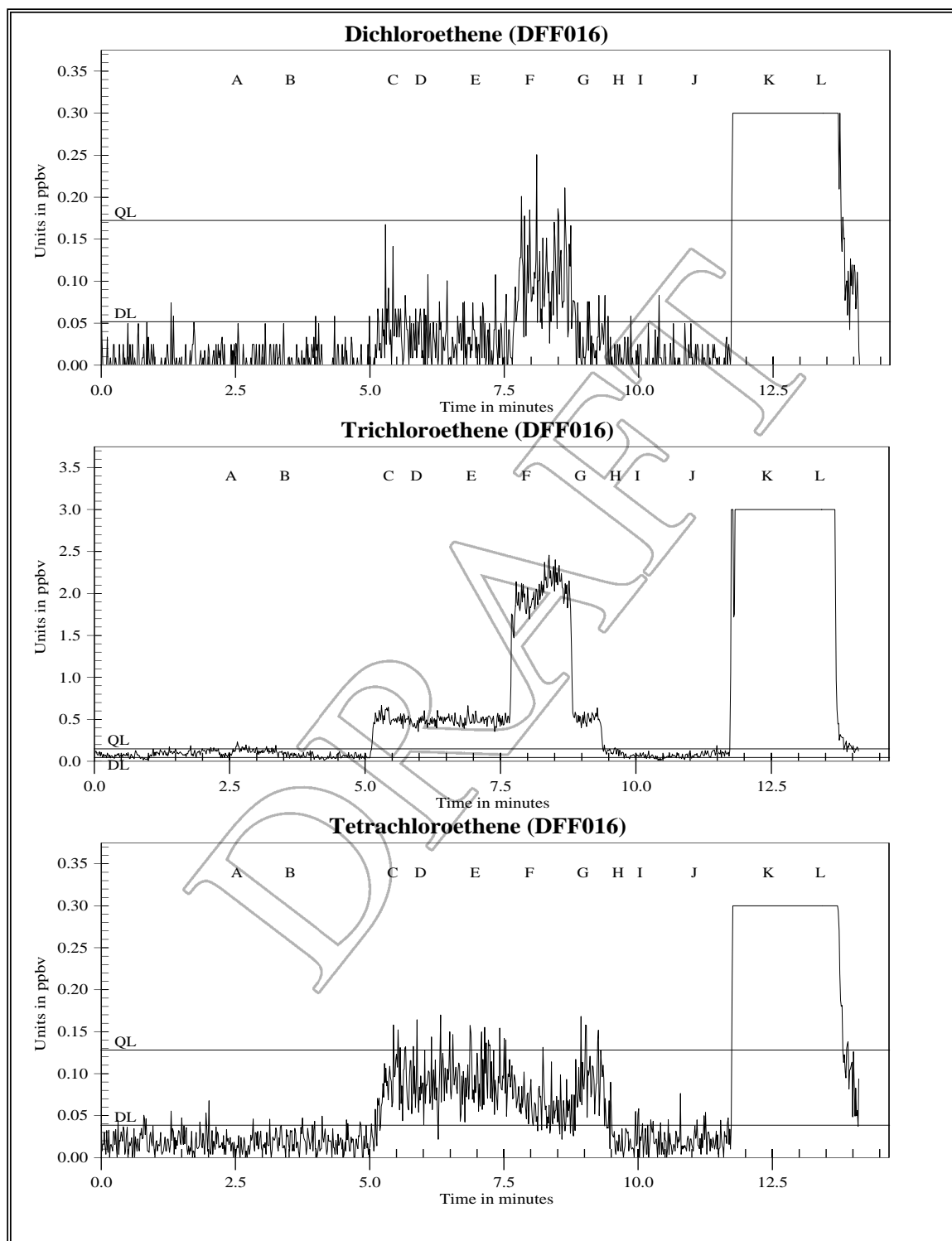


Figure 12b Unit 013 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 12c

TAGA Target Compound Summary for Unit 013 Preliminary Survey File: DFF016 Acquired on 20 May 2008 at 19:41:01				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.052	0.044	0.038
Quantitation Limits - QL:		0.17	0.15	0.13
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.052	0.13J	DL=0.038
D - E	Closet	DL=0.052	0.48	0.090J
F - G	Crawl space	0.098J	2.0	0.059J
I - J	Post-exit ambient	DL=0.052	0.058J	DL=0.038
K - L	30 mL/min spike	7.7	6.6	4.9

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 13a

TAGA File Event Summary File: DFF017 Acquired on 20 May 2008 at 20:09:04 Title: Unit 014 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.3	161	Start of the pre-entry ambient
B	3.5	250	End of the pre-entry ambient
C	6.0	424	Entering the unit
D	6.6	471	Start of the bedroom
E	7.7	543	End of the bedroom
F	8.3	589	Start of the crawl space
G	9.3	662	End of the crawl space
H	10.1	718	Exiting the unit
I	11.1	783	Start of the post-exit ambient
J	12.0	852	End of the post-exit ambient
K	13.2	935	Start of the 30 mL/min spike
L	14.2	1008	End of the 30 mL/min spike

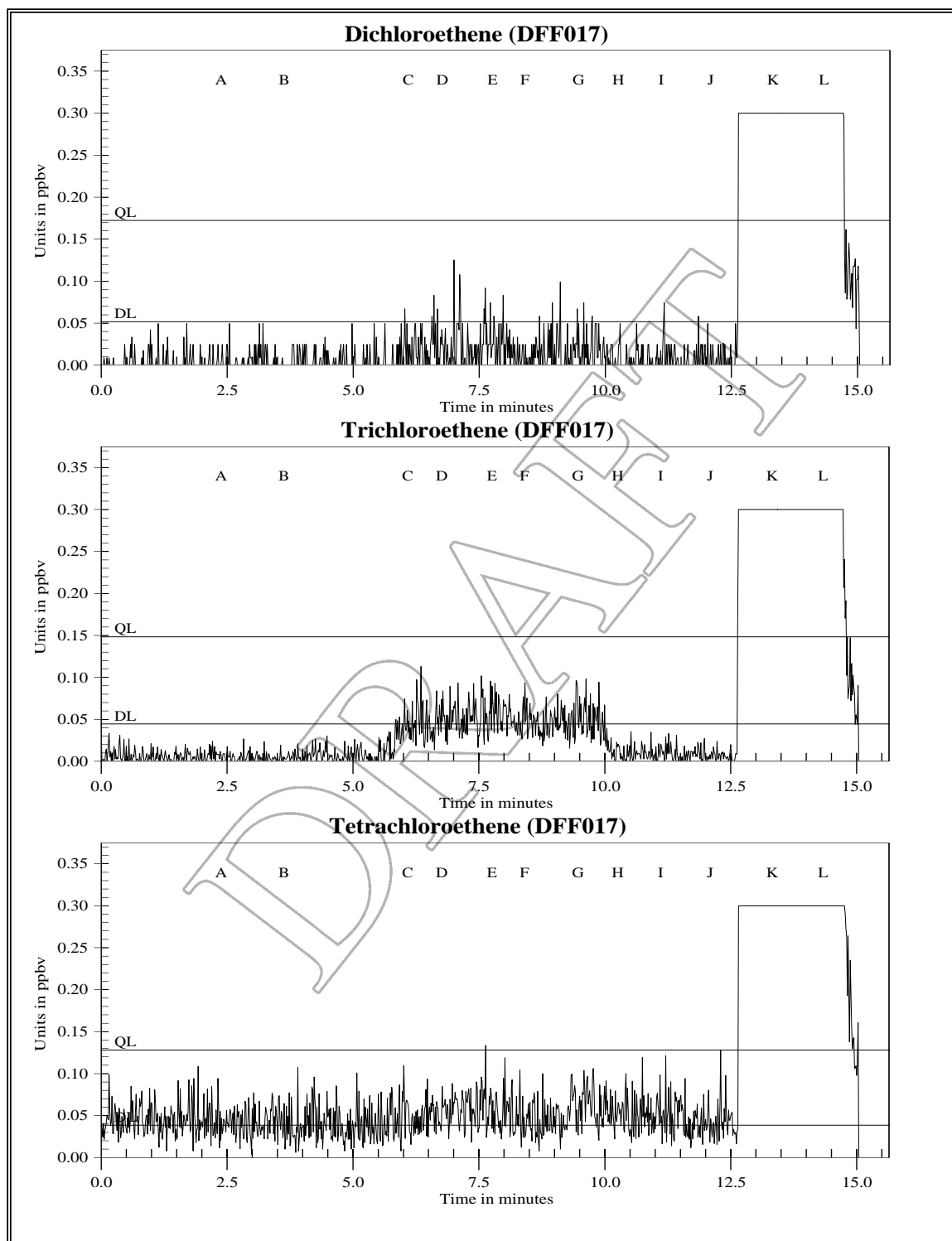


Figure 13b Unit 014 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 13c

TAGA Target Compound Summary for Unit 014 Preliminary Survey File: DFF017 Acquired on 20 May 2008 at 20:09:04				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.052	0.044	0.038
Quantitation Limits - QL:		0.17	0.15	0.13
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.052	DL=0.044	0.042J
D - E	Bedroom	DL=0.052	0.052J	0.058J
F - G	Crawl space	DL=0.052	0.047J	0.046J
I - J	Post-exit ambient	DL=0.052	DL=0.044	0.047J
K - L	30 mL/min spike	6.2	5.5	5.5

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

Figure 14a

TAGA File Event Summary File: DFF018 Acquired on 20 May 2008 at 20:42:38 Title: Unit 015 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.3	164	Start of the pre-entry ambient
B	3.3	234	End of the pre-entry ambient
C	5.2	366	Entering the unit
D	5.4	381	Start of the closet
E	6.3	450	End of the closet
F	6.7	474	Exiting the unit
G	7.5	533	Start of the post-exit ambient
H	8.5	605	End of the post-exit ambient
I	9.7	686	Start of the 30 mL/min spike
J	10.7	757	End of the 30 mL/min spike

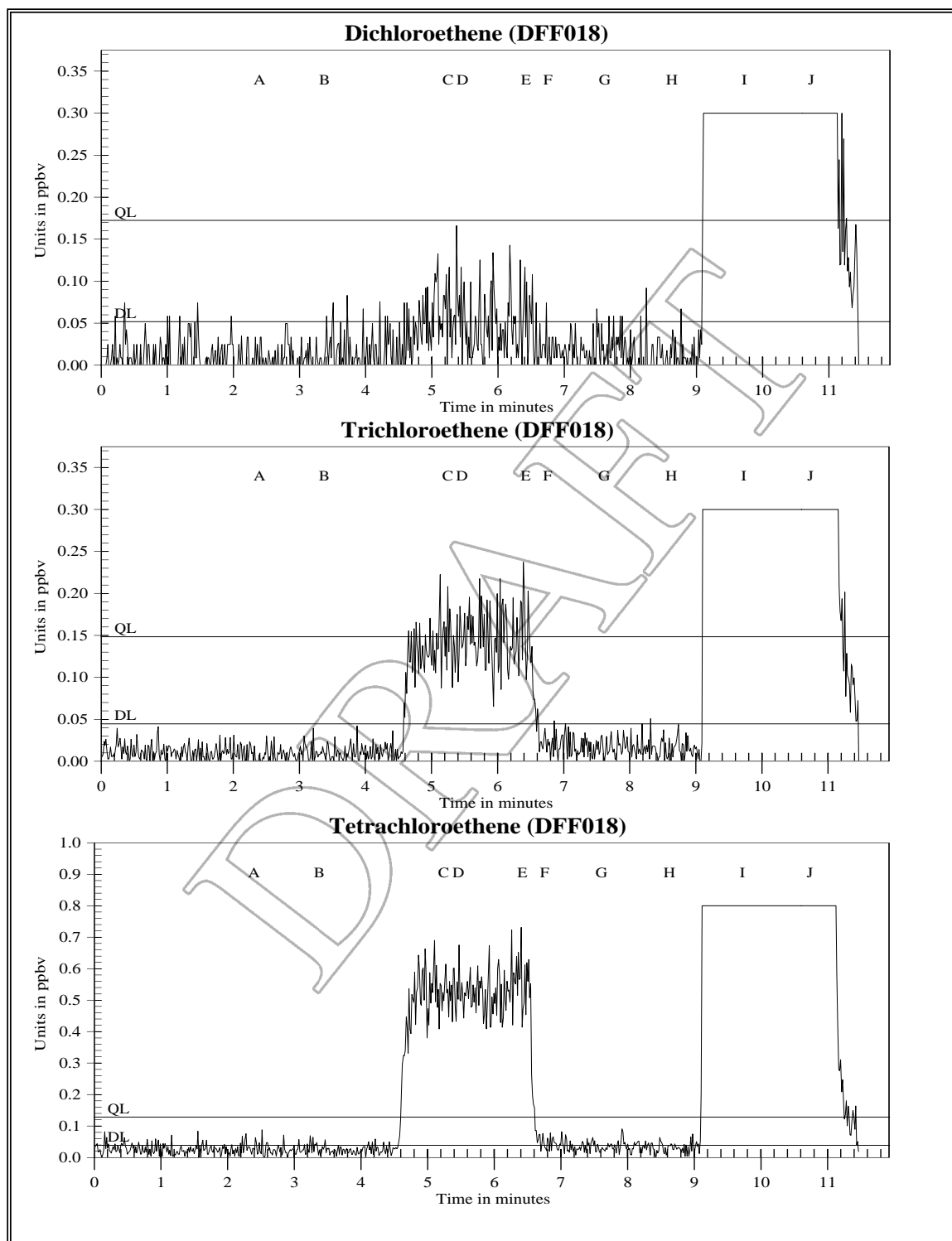


Figure 14b Unit 015 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 14c

TAGA Target Compound Summary for Unit 015 Preliminary Survey File: DFF018 Acquired on 20 May 2008 at 20:42:38				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.052	0.044	0.038
Quantitation Limits - QL:		0.17	0.15	0.13
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.052	DL=0.044	DL=0.038
D - E	Closet	DL=0.052	0.15J	0.52
G - H	Post-exit ambient	DL=0.052	DL=0.044	DL=0.038
I - J	30 mL/min spike	6.6	6.0	5.8

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 15a

TAGA File Event Summary File: DFF021 Acquired on 20 May 2008 at 22:25:26 Title: Unit 015 Tedlar® Bag Analysis			
Flag	Time	Sequence	Description
A	4.8	338	Start of the Tedlar® bag
B	6.6	471	End of the Tedlar® bag
C	8.6	612	Start of the Tedlar® bag
D	10.8	763	End of the Tedlar® bag
E	17.1	1211	Start of the 30 mL/min spike
F	18.3	1296	End of the 30 mL/min spike

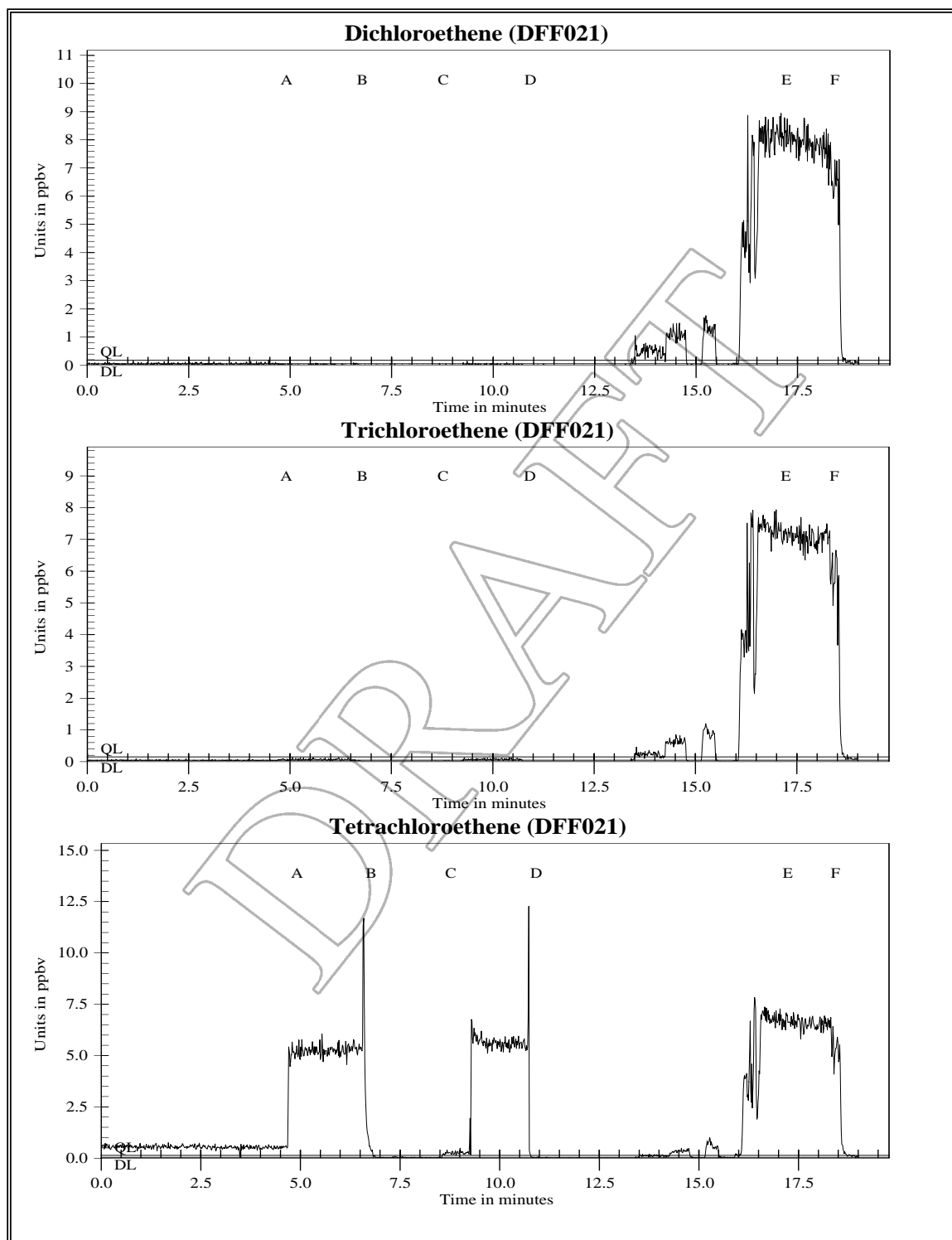


Figure 15b Unit 015 Tedlar® Bag Analysis for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 15c

TAGA Target Compound Summary for Unit 015 Tedlar [®] Bag Analysis File: DFF021 Acquired on 20 May 2008 at 22:25:26				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.052	0.044	0.038
Quantitation Limits - QL:		0.17	0.15	0.13
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Unit 015 Tedlar [®] bag	DL=0.052	0.067J	5.3
C - D	Unit 015 Tedlar [®] bag	DL=0.052	0.054J	4.0
E - F	30 mL/min spike	7.9	7.1	6.6

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 16a

TAGA File Event Summary File: DFF023 Acquired on 21 May 2008 at 09:29:31 Title: Unit 001 Tedlar® Bag Analysis			
Flag	Time	Sequence	Description
A	2.5	177	Start of the Tedlar® bag
B	4.1	289	End of the Tedlar® bag
C	5.7	402	Start of the Tedlar® bag
D	7.2	512	End of the Tedlar® bag
E	9.9	700	Start of the 30 mL/min spike
F	11.2	794	End of the 30 mL/min spike

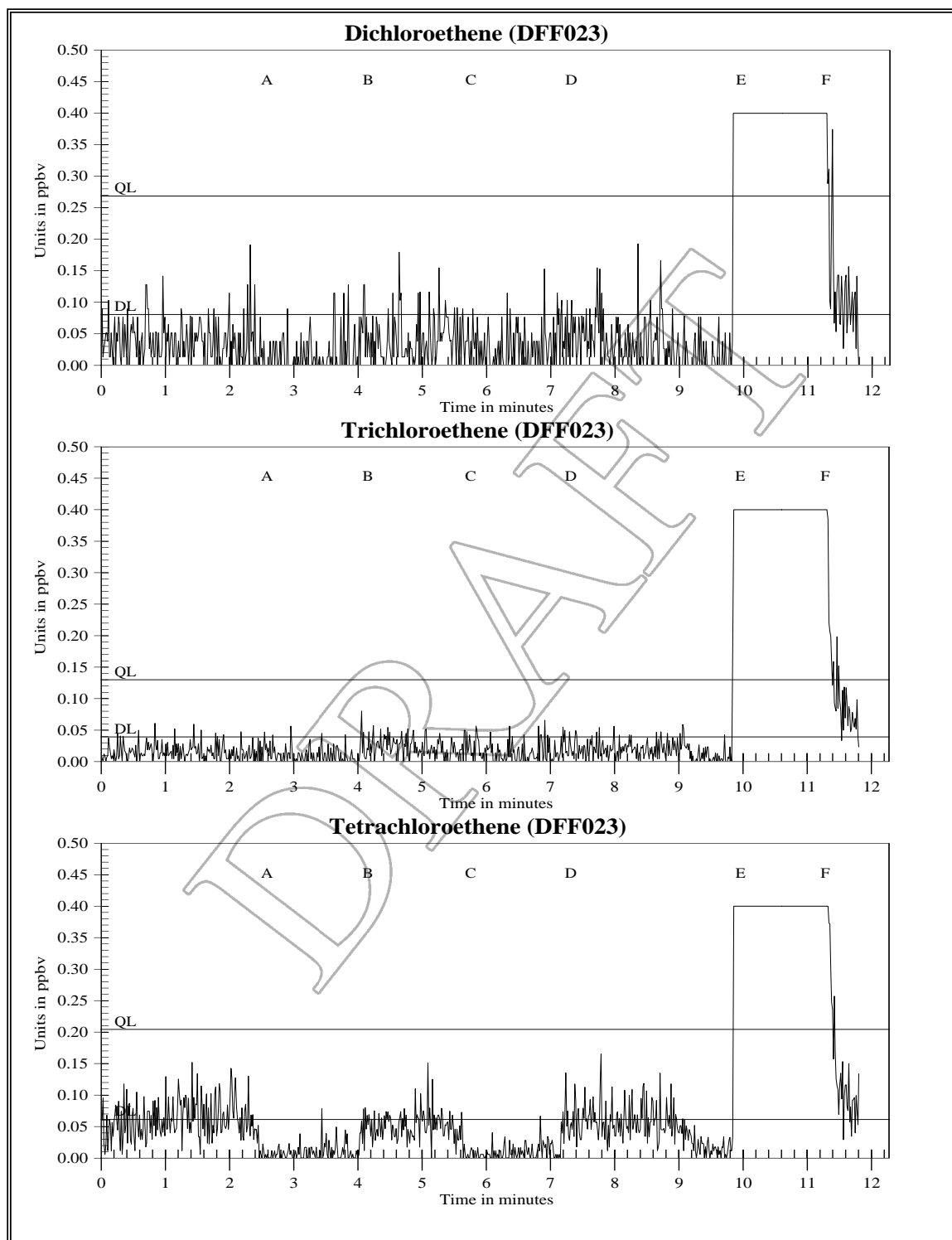


Figure 16b Unit 001 Tedlar® Bag Analysis for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 16c

TAGA Target Compound Summary for Unit 001 Tedlar® Bag Analysis File: DFF023 Acquired on 21 May 2008 at 09:29:31				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.080	0.039	0.061
Quantitation Limits - QL:		0.27	0.13	0.20
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Tedlar® bag sample	DL=0.080	DL=0.039	DL=0.061
C - D	Tedlar® bag sample	DL=0.080	DL=0.039	DL=0.061
E - F	30 mL/min spike	7.0	6.3	6.2

Concentrations are given in parts per billion by volume

Figure 17a

TAGA File Event Summary File: DFF026 Acquired on 21 May 2008 at 10:41:59 Title: Unit 016 Preliminary Survey One			
Flag	Time	Sequence	Description
A	1.6	114	Start of the pre-entry ambient
B	2.6	185	End of the pre-entry ambient
C	8.5	605	Start of the crawl space
D	9.6	677	End of the crawl space
E	13.0	921	Start of the crawl space
F	14.0	994	End of the crawl space
G	15.1	1070	Start of the water pipes
H	16.1	1140	End of the water pipes
I	16.9	1195	Start of the post-exit ambient
J	17.9	1268	End of the post-exit ambient
K	19.3	1363	Start of the 30 mL/min spike
L	20.3	1435	End of the 30 mL/min spike

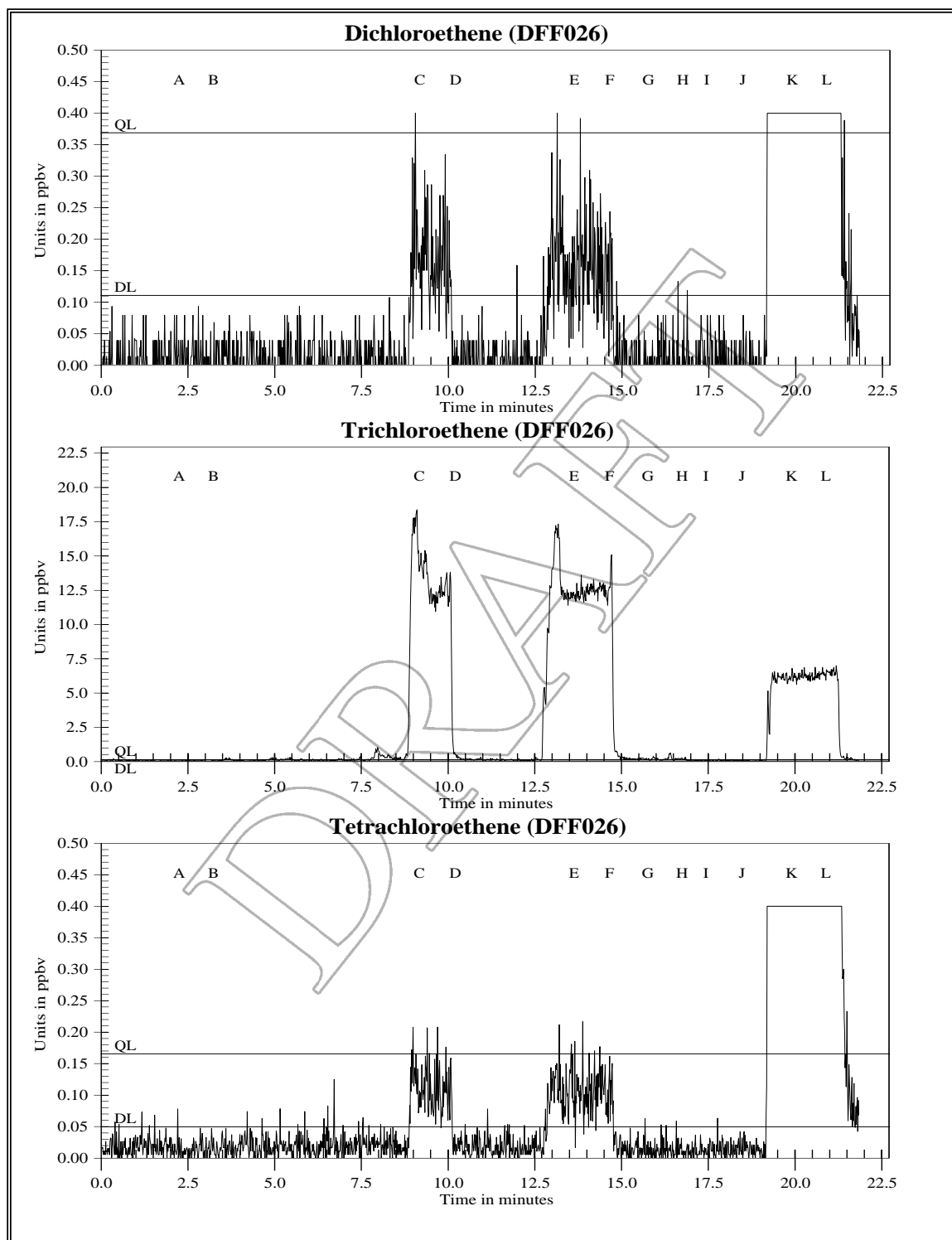


Figure 17b Unit 016 Preliminary Survey One for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 17c

TAGA Target Compound Summary for Unit 016 Preliminary Survey One File: DFF026 Acquired on 21 May 2008 at 10:41:59				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.11	0.041	0.050
Quantitation Limits - QL:		0.37	0.14	0.17
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.11	0.059J	DL=0.050
C - D	Crawl space	0.17J	13.	0.11J
E - F	Crawl space	0.16J	12.	0.11J
G - H	Water pipes	DL=0.11	0.21	DL=0.050
I - J	Post-exit ambient	DL=0.11	0.089J	DL=0.050
K - L	30 mL/min spike	6.9	6.2	6.1

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

Figure 18a

TAGA File Event Summary File: DFF027 Acquired on 21 May 2008 at 11:10:12 Title: Unit 016 Preliminary Survey Two			
Flag	Offset Time	Offset Sequence	Description
A	2.1	150	Start of the pre-entry ambient
B	3.1	222	End of the pre-entry ambient
C	4.2	298	Entering the unit
D	5.0	353	Start of the kitchen
E	6.0	425	End of the kitchen
F	6.4	451	Start under the kitchen sink
G	7.4	524	End under the kitchen sink
H	8.0	565	Exiting the unit
I	8.3	591	Start of the post-exit ambient
J	9.3	660	End of the post-exit ambient
K	10.4	736	Start of the 30 mL/min spike
L	11.4	805	End of the 30 mL/min spike

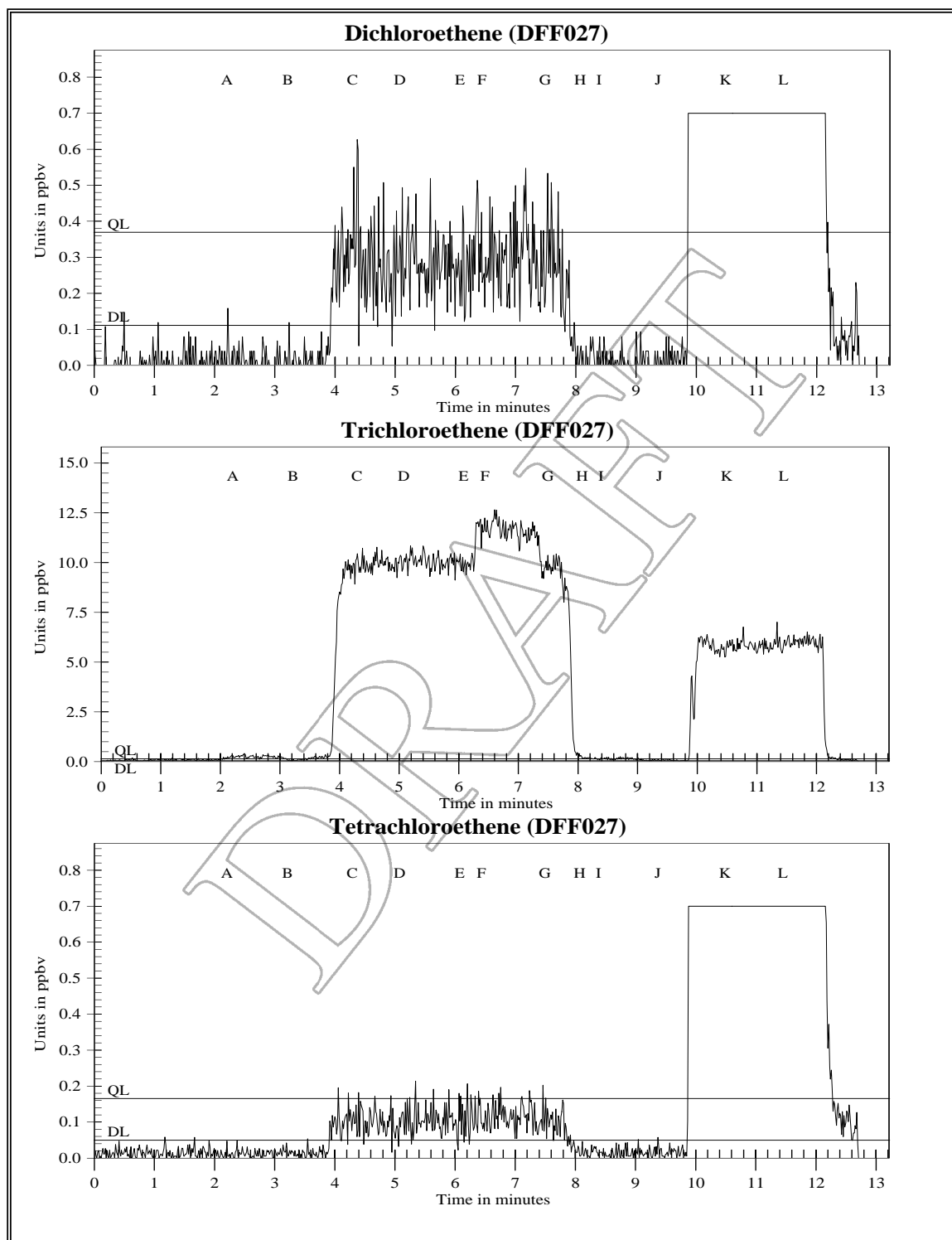


Figure 18b Unit 016 Preliminary Survey Two for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 18c

TAGA Target Compound Summary for Unit 016 Preliminary Survey Two File: DFF027 Acquired on 21 May 2008 at 11:10:12				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.11	0.041	0.050
Quantitation Limits - QL:		0.37	0.14	0.17
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.11	0.24	DL=0.050
D - E	Kitchen	0.29J	10.	0.10J
F - G	Under the kitchen sink	0.30J	12.	0.12J
I - J	Post-exit ambient	DL=0.11	0.13J	DL=0.050
K - L	30 mL/min spike	6.4	5.8	5.9

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 19a

TAGA File Event Summary File: DFF028 Acquired on 21 May 2008 at 15:46:41 Title: Unit 017 Preliminary Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.5	181	Start of the pre-entry ambient
B	3.5	251	End of the pre-entry ambient
C	6.3	443	Entering the unit
D	7.1	504	Start of the bathroom
E	8.1	574	End of the bathroom
F	9.3	657	Start of the crawl space
G	10.3	726	End of the crawl space
H	11.5	811	Exiting the unit
I	12.0	849	Start of the post-exit ambient
J	13.0	920	End of the post-exit ambient
K	14.0	992	Start of the 30 mL/min spike
L	15.0	1063	End of the 30 mL/min spike

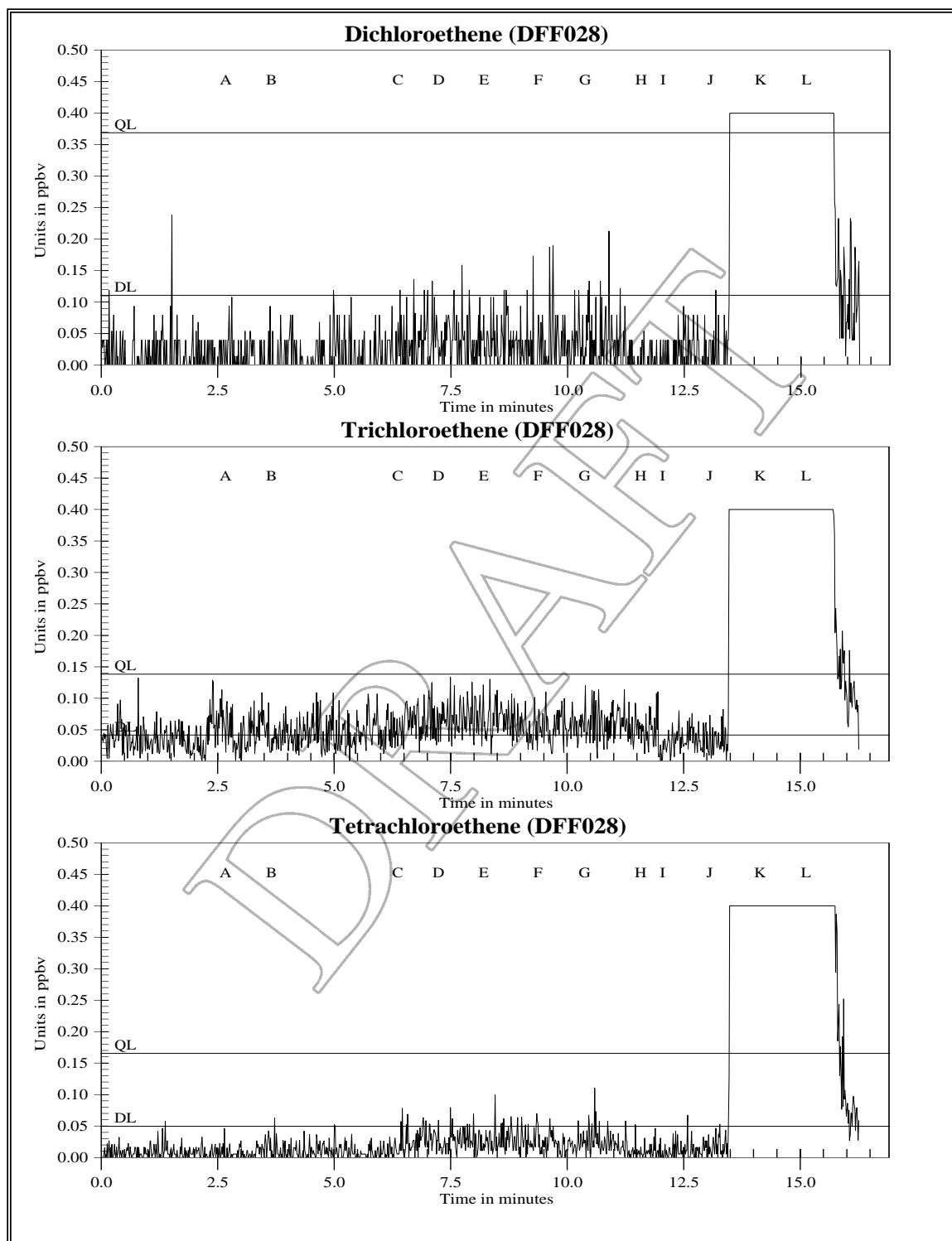


Figure 19b Unit 017 Preliminary Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 19c

TAGA Target Compound Summary for Unit 017 Preliminary Survey File: DFF028 Acquired on 21 May 2008 at 15:46:41				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.11	0.041	0.050
Quantitation Limits - QL:		0.37	0.14	0.17
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.11	0.050J	DL=0.050
D - E	Bathroom	DL=0.11	0.067J	DL=0.050
F - G	Crawlspace	DL=0.11	0.055J	DL=0.050
I - J	Post-exit ambient	DL=0.11	DL=0.041	DL=0.050
K - L	30 mL/min spike	6.4	6.3	6.3

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

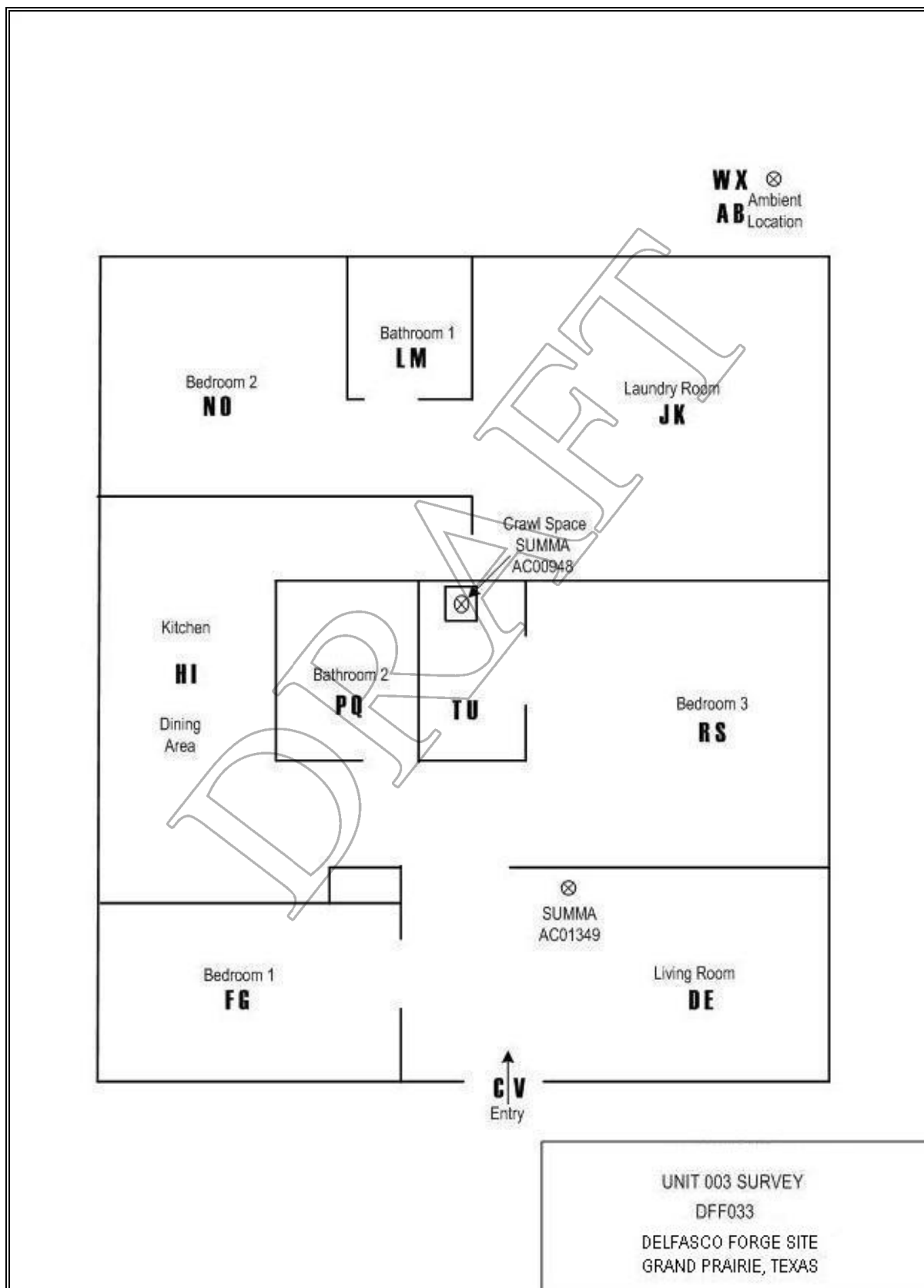


Figure 20a Unit 003 Survey Floor Plan, DFF033

Figure 20b

TAGA File Event Summary File: DFF033 Acquired on 22 May 2008 at 09:04:20 Title: Unit 003 Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	149	Start of the pre-entry ambient
B	3.1	220	End of the pre-entry ambient
C	6.4	452	Entering the unit
D	6.6	470	Start of the living room
E	7.6	540	End of the living room
F	7.9	560	Start of bedroom one
G	8.9	632	End of bedroom one
H	9.4	669	Start of the kitchen/dining area
I	10.4	740	End of the kitchen/dining area
J	11.0	782	Start of the laundry room
K	12.0	853	End of the laundry room
L	12.4	878	Start of bathroom one
M	13.4	951	End of bathroom one
N	13.8	975	Start of bedroom two
O	14.8	1049	End of bedroom two
P	15.8	1117	Start of bathroom two
Q	16.8	1187	End of bathroom two
R	17.0	1207	Start of bedroom three
S	18.0	1277	End of bedroom three
T	18.3	1295	Start of the crawl space
U	19.3	1368	End of the crawl space
V	20.0	1419	Exiting the unit
W	21.7	1537	Start of the post-exit ambient
X	22.7	1606	End of the post-exit ambient
Y	23.8	1685	Start of the 30 mL/min spike
Z	24.8	1757	End of the 30 mL/min spike

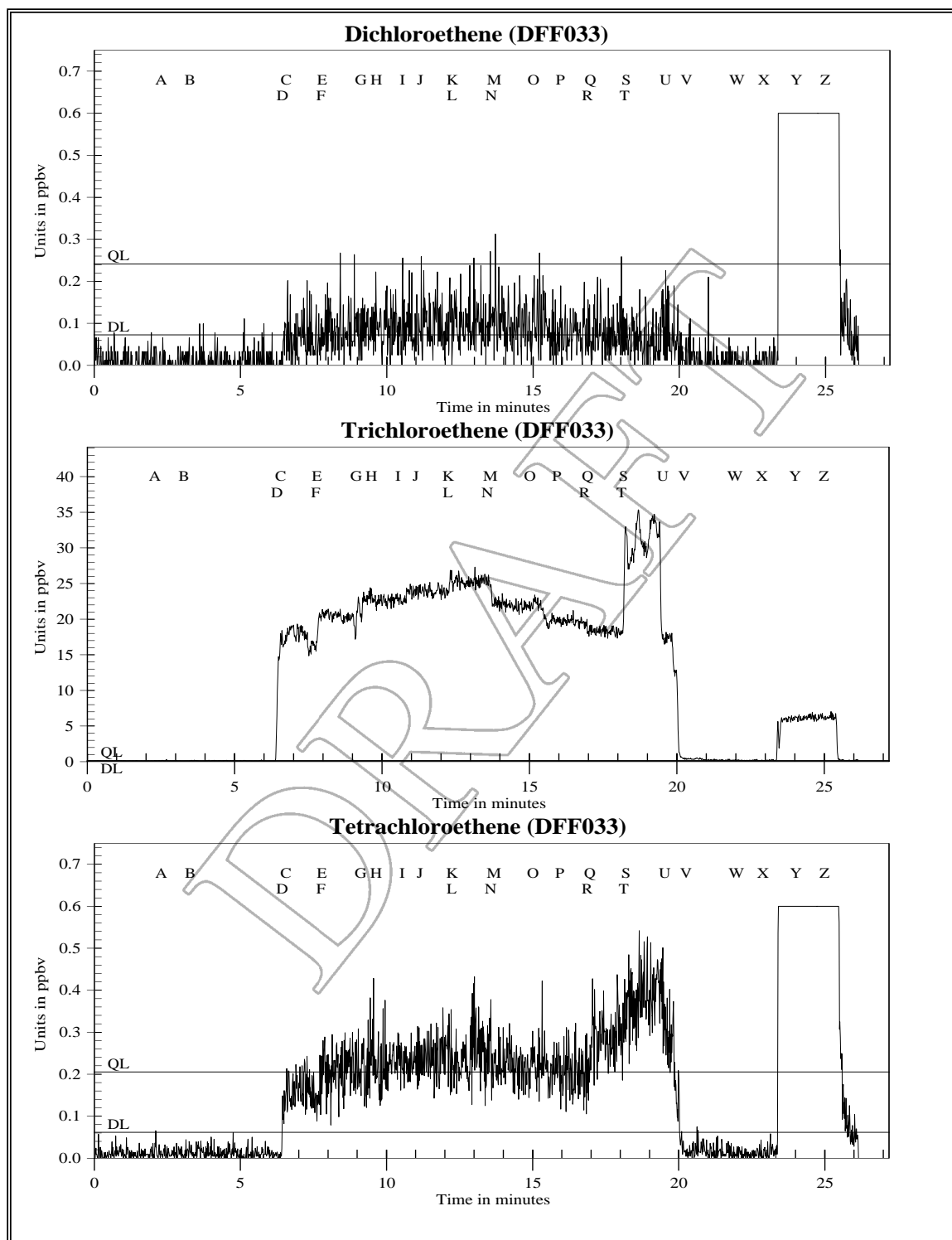


Figure 20c Unit 003 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 20d

TAGA Target Compound Summary for Unit 003 Survey File: DFF033 Acquired on 22 May 2008 at 09:04:20				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.072	0.046	0.062
Quantitation Limits - QL:		0.24	0.15	0.21
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.072	0.11J	DL=0.062
D - E	Living room	DL=0.072	18.	0.16J
F - G	Bedroom one	0.082J	20.	0.21
H - I	Kitchen/dining area	0.094J	23.	0.23
J - K	Laundry room	0.097J	24.	0.24
L - M	Bathroom one	0.095J	25.	0.25
N - O	Bedroom two	0.096J	22.	0.22
P - Q	Bathroom two	0.075J	20.	0.21
R - S	Bedroom three	0.084J	18.	0.29
T - U	Crawl space	DL=0.072	31.	0.39
V - W	Post-exit ambient	DL=0.072	0.41	DL=0.062
Y - Z	30 mL/min spike	6.8	6.2	5.8

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

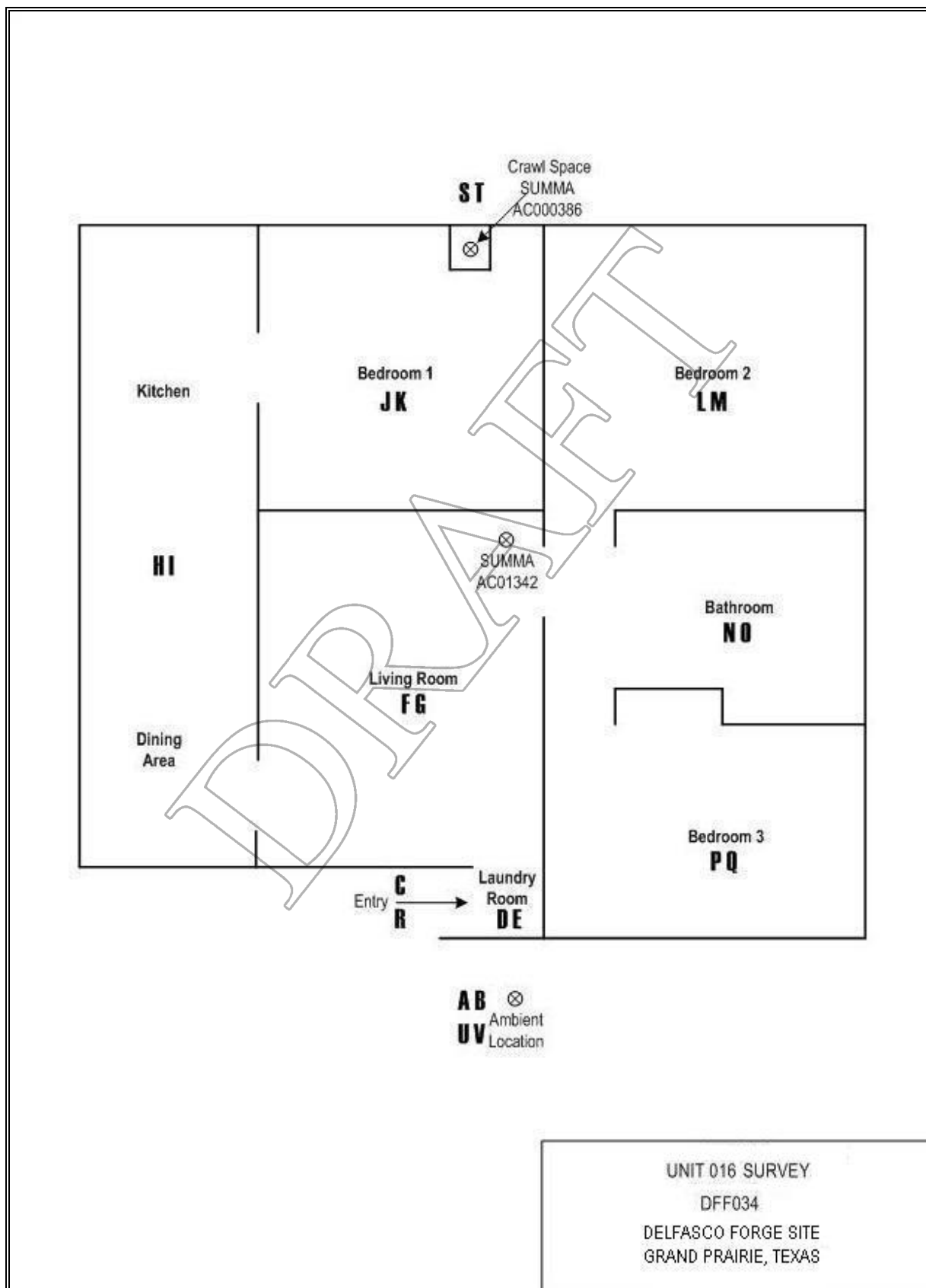


Figure 21b

TAGA File Event Summary File: DFF034 Acquired on 22 May 2008 at 09:45:36 Title: Unit 016 Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.1	151	Start of the pre-entry ambient
B	3.1	221	End of the pre-entry ambient
C	4.4	314	Entering the unit
D	4.7	331	Start of the laundry room
E	5.7	401	End of the laundry room
F	6.0	422	Start of the living room
G	7.0	494	End of the living room
H	7.2	512	Start of the dining area/kitchen
I	8.2	583	End of the dining area/kitchen
J	8.6	611	Start of bedroom one
K	9.6	682	End of bedroom one
L	11.0	780	Start of bedroom two
M	12.0	850	End of bedroom two
N	12.3	873	Start of the bathroom
O	13.3	945	End of the bathroom
P	13.6	963	Start of bedroom three
Q	14.6	1034	End of bedroom three
R	15.1	1070	Exiting the unit
S	21.5	1520	Start of the crawl space
T	22.7	1604	End of the crawl space
U	25.6	1813	Start of the post-exit ambient
V	26.6	1885	End of the post-exit ambient
W	27.7	1962	Start of the 30 mL/min spike
X	28.9	2044	End of the 30 mL/min spike

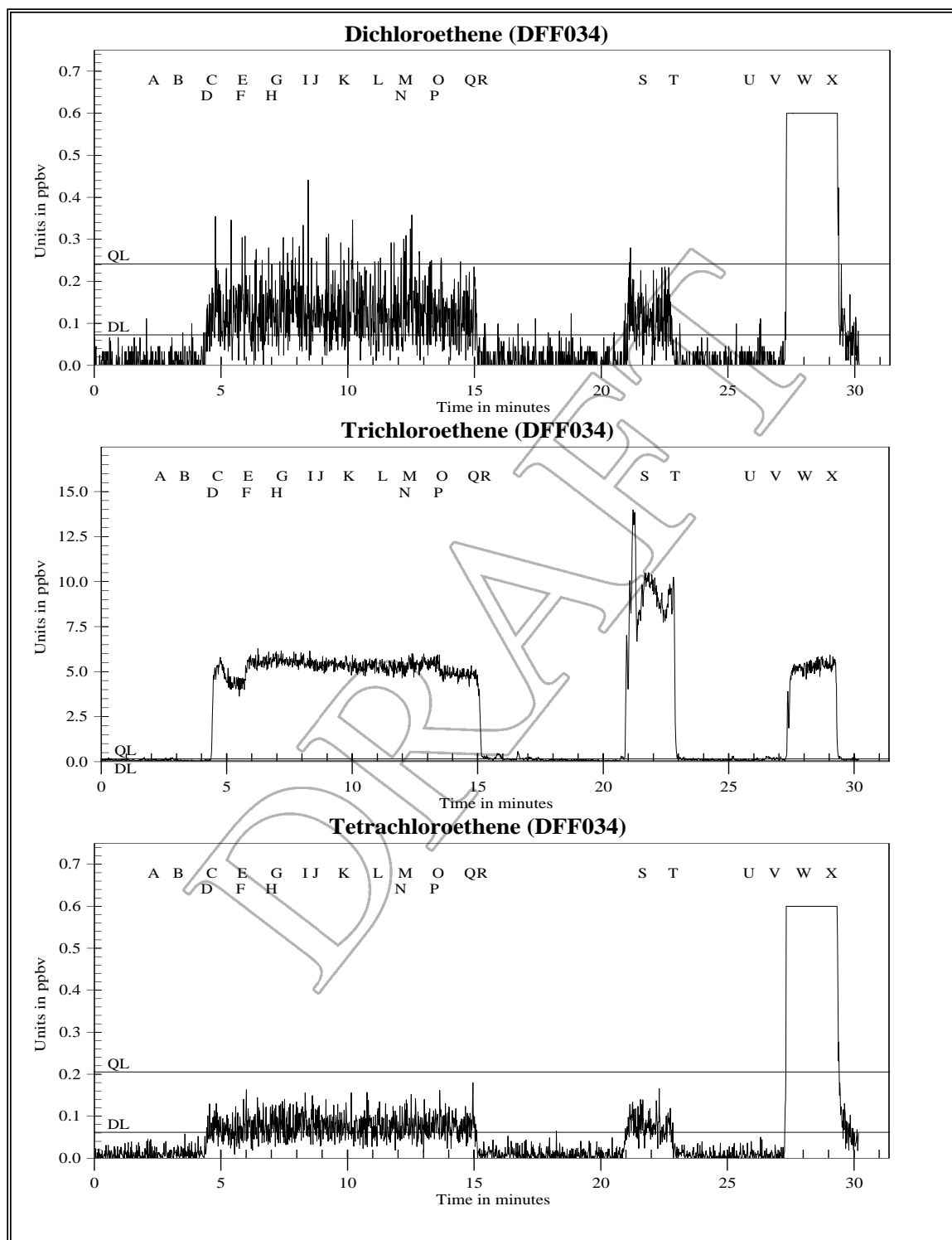


Figure 21c Unit 016 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 21d

TAGA Target Compound Summary for Unit 016 Survey File: DFF034 Acquired on 22 May 2008 at 09:45:36				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.072	0.046	0.062
Quantitation Limits - QL:		0.24	0.15	0.21
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.072	0.11J	DL=0.062
D - E	Laundry room	0.12J	4.6	0.068J
F - G	Living room	0.12J	5.6	0.075J
H - I	Dining Area/Kitchen	0.14J	5.6	0.078J
J - K	Bedroom one	0.12J	5.4	0.078J
L - M	Bedroom two	0.12J	5.2	0.073J
N - O	Bathroom	0.13J	5.4	0.077J
P - Q	Bedroom three	0.11J	4.9	0.076J
S - T	Crawl space	0.11J	9.3	0.076J
U - V	Post-exit ambient	DL=0.072	0.13J	DL=0.062
W - X	30 mL/min spike	6.1	5.3	5.3

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

Figure 22a

TAGA File Event Summary File: DFF035 Acquired on 22 May 2008 at 10:40:08 Title: Unit 018 Tedlar® Bag Analysis			
Flag	Time	Sequence	Description
A	2.3	163	Start of the Tedlar® bag
B	3.3	235	End of the Tedlar® bag
C	4.7	334	Start of the 30 mL/min spike
D	6.1	432	End of the 30 mL/min spike

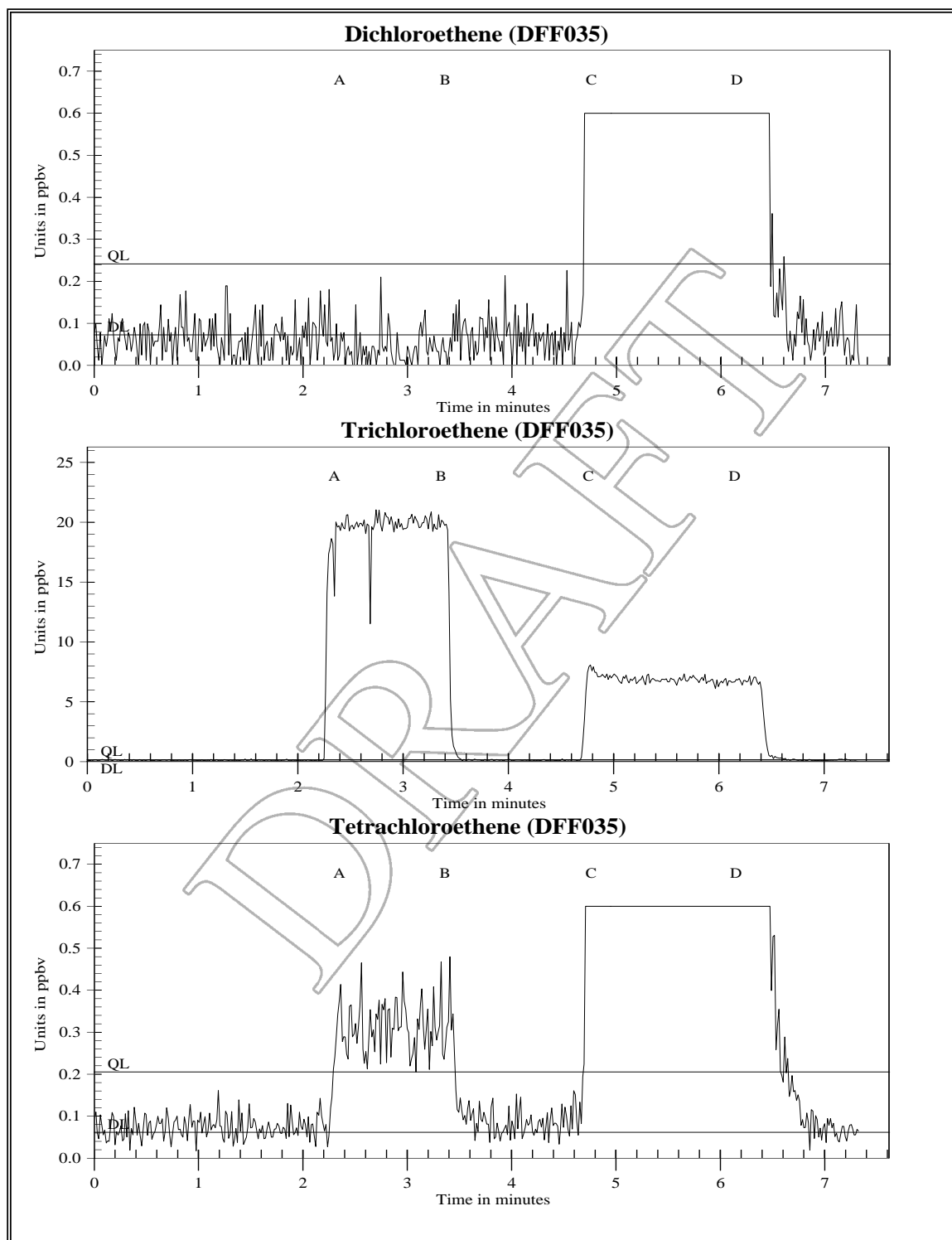


Figure 22b Unit 018 Tedlar® Bag Analysis for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 22c

TAGA Target Compound Summary for Unit 018 Tedlar® Bag Analysis File: DFF035 Acquired on 22 May 2008 at 10:40:08				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.072	0.046	0.062
Quantitation Limits - QL:		0.24	0.15	0.21
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Tedlar® bag 018-TB-052208	DL=0.072	20.	0.31
C - D	30 mL/min spike	6.0	6.8	7.2

Concentrations are given in parts per billion by volume

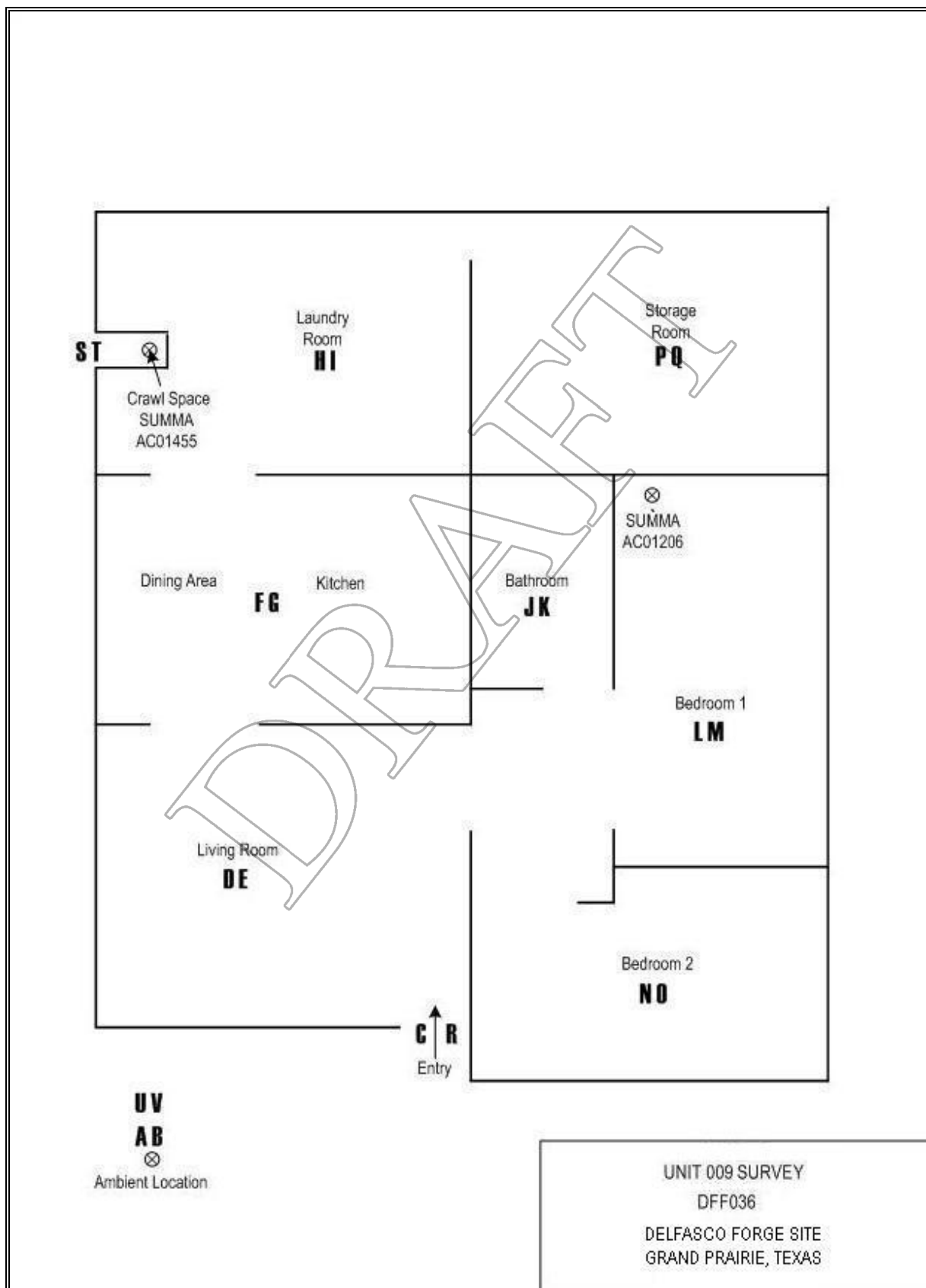


Figure 23a Unit 009 Survey Floor Plan, DFF036

Figure 23b

TAGA File Event Summary File: DFF036 Acquired on 22 May 2008 at 11:30:09 Title: Unit 009 Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.6	183	Start of the pre-entry ambient
B	3.6	253	End of the pre-entry ambient
C	5.5	391	Entering the unit
D	5.8	413	Start of the living room
E	6.8	484	End of the living room
F	7.1	503	Start of the kitchen/dining area
G	8.1	575	End of the kitchen/dining area
H	8.3	589	Start of the laundry room
I	9.3	661	End of the laundry room
J	9.9	702	Start of the bathroom
K	10.9	773	End of the bathroom
L	11.2	792	Start of bedroom one
M	12.2	861	End of bedroom one
N	12.7	899	Start of bedroom two
O	13.7	968	End of bedroom two
P	14.4	1020	Start of the storage room
Q	15.4	1090	End of the storage room
R	16.1	1141	Exiting the unit
S	20.8	1475	Start of the crawl space
T	21.9	1550	End of the crawl space
U	24.2	1710	Start of the post-exit ambient
V	25.7	1819	End of the post-exit ambient
W	27.0	1913	Start of the 30 mL/min spike
X	28.1	1986	End of the 30 mL/min spike

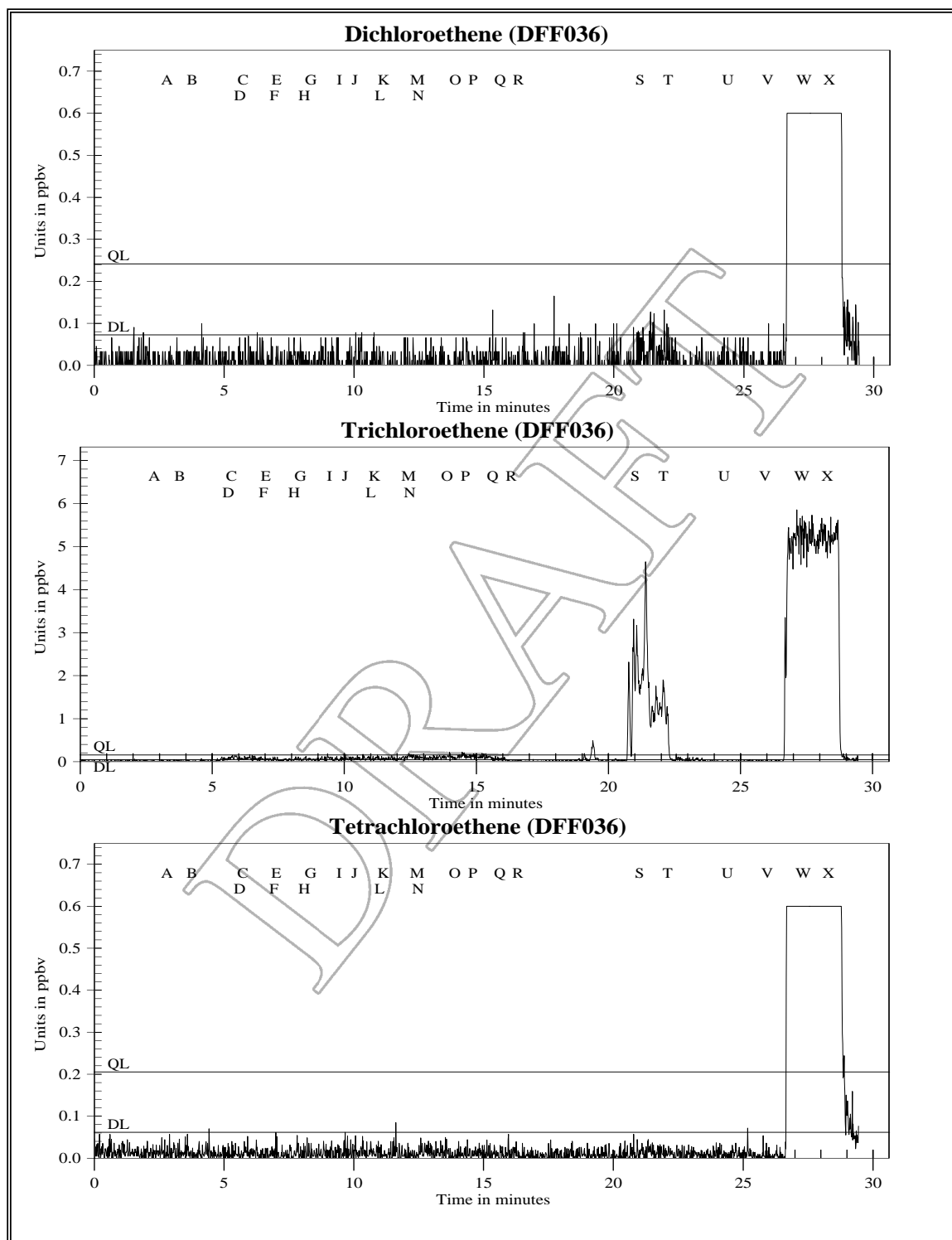


Figure 23c Unit 009 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 23d

TAGA Target Compound Summary for Unit 009 Survey File: DFF036 Acquired on 22 May 2008 at 11:30:09				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.072	0.046	0.062
Quantitation Limits - QL:		0.24	0.15	0.21
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.072	DL=0.046	DL=0.062
D - E	Living room	DL=0.072	0.080J	DL=0.062
F - G	Kitchen/Dining area	DL=0.072	0.049J	DL=0.062
H - I	Laundry room	DL=0.072	0.059J	DL=0.062
J - K	Bathroom	DL=0.072	0.076J	DL=0.062
L - M	Bedroom one	DL=0.072	0.074J	DL=0.062
N - O	Bedroom two	DL=0.072	0.092J	DL=0.062
P - Q	Storage room	DL=0.072	0.12J	DL=0.062
S - T	Crawl space	DL=0.072	1.9	DL=0.062
U - V	Post-exit ambient	DL=0.072	DL=0.046	DL=0.062
W - X	30 mL/min spike	5.9	5.2	5.4

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

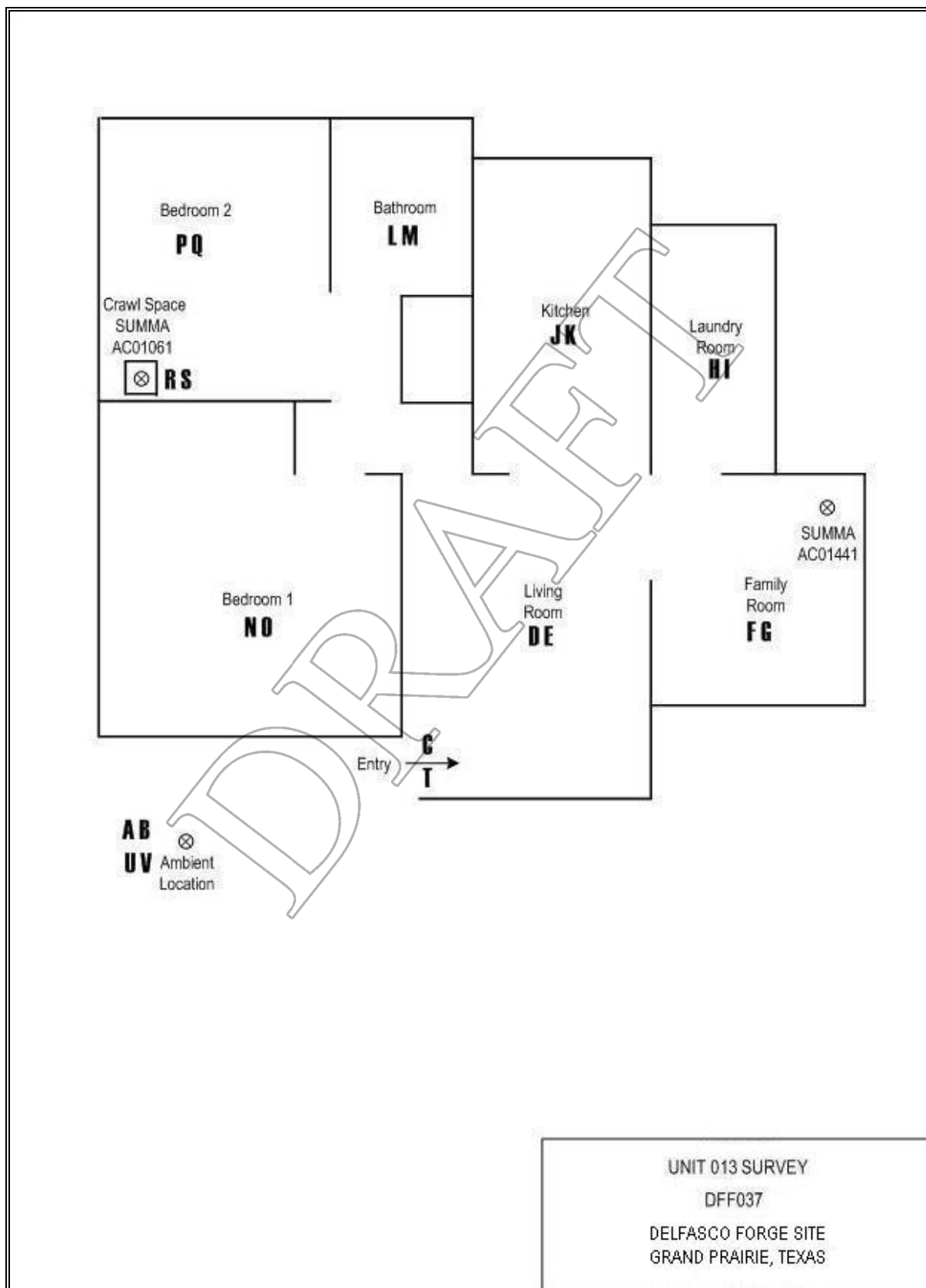


Figure 24a Unit 013 Survey Floor Plan, DFF037

Figure 24b

TAGA File Event Summary File: DFF037 Acquired on 22 May 2008 at 12:13:32 Title: Unit 013 Survey			
Flag	Offset Time	Offset Sequence	Description
A	2.4	174	Start of the pre-entry ambient
B	3.4	243	End of the pre-entry ambient
C	5.1	364	Entering the unit
D	5.6	395	Start of the living room
E	6.6	465	End of the living room
F	6.9	490	Start of the family room
G	7.9	560	End of the family room
H	8.3	588	Start of the laundry
I	9.3	658	End of the laundry
J	9.7	689	Start of the kitchen
K	10.7	760	End of the kitchen
L	11.3	797	Start of the bathroom
M	12.3	869	End of the bathroom
N	12.7	896	Start of bedroom one
O	13.7	968	End of bedroom one
P	14.0	991	Start of bedroom two
Q	15.0	1062	End of bedroom two
R	16.9	1197	Start of the crawl space
S	18.0	1273	End of the crawl space
T	19.2	1362	Exiting the unit
U	20.5	1451	Start of the post-exit ambient
V	21.6	1527	End of the post-exit ambient
W	22.6	1600	Start of the 30 mL/min spike
X	23.6	1672	End of the 30 mL/min spike

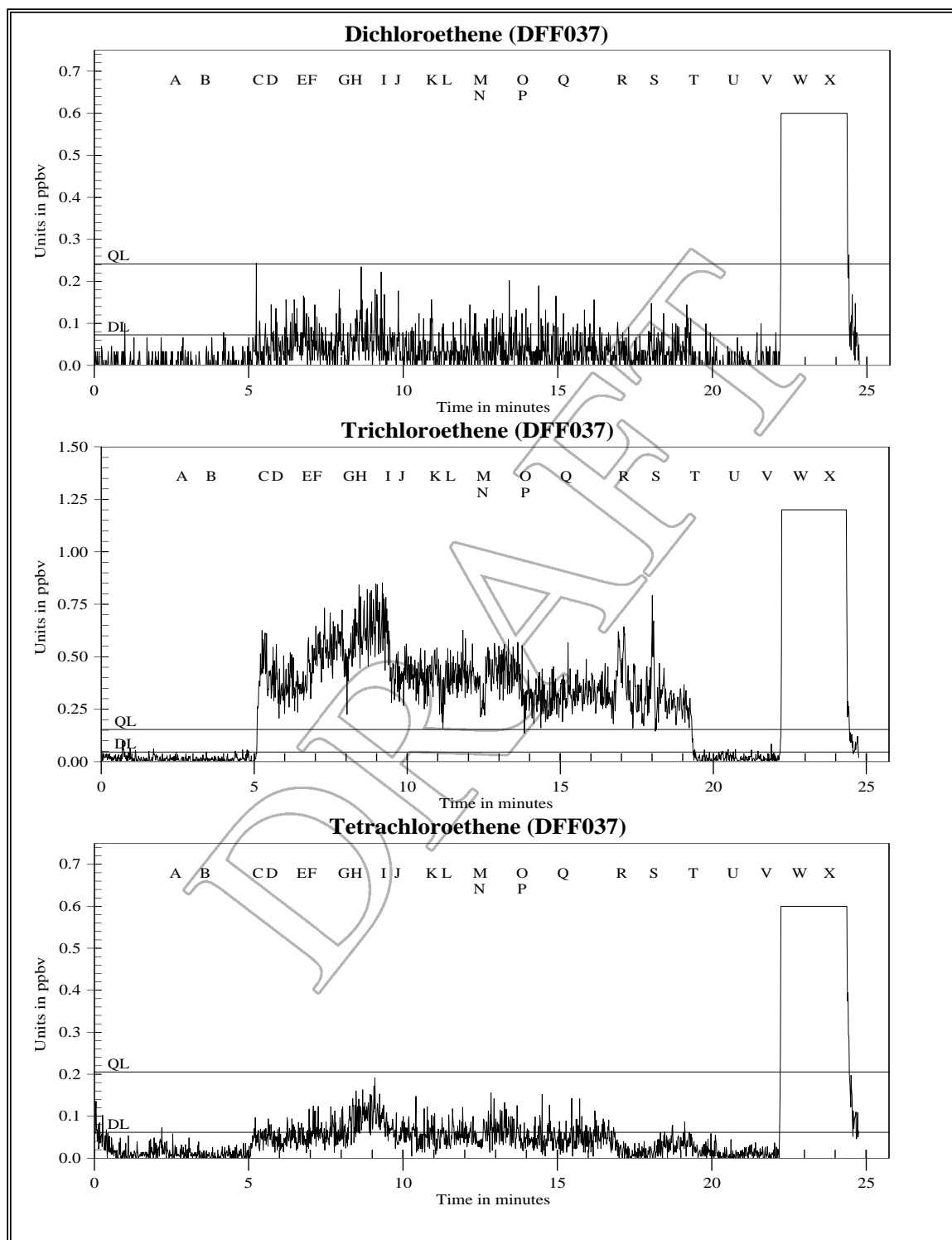


Figure 24c Unit 013 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 24d

TAGA Target Compound Summary for Unit 013 Survey File: DFF037 Acquired on 22 May 2008 at 12:13:32				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.072	0.046	0.062
Quantitation Limits - QL:		0.24	0.15	0.21
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.072	DL=0.046	DL=0.062
D - E	Living room	DL=0.072	0.37	DL=0.062
F - G	Family room	DL=0.072	0.55	0.062J
H - I	Laundry	0.073J	0.64	0.10J
J - K	Kitchen	DL=0.072	0.41	DL=0.062
L - M	Bathroom	DL=0.072	0.41	DL=0.062
N - O	Bedroom one	DL=0.072	0.44	0.069J
P - Q	Bedroom two	DL=0.072	0.30	DL=0.062
R - S	Crawl space	DL=0.072	0.36	DL=0.062
U - V	Post-exit ambient	DL=0.072	DL=0.046	DL=0.062
W - X	30 mL/min spike	6.0	5.1	5.4

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

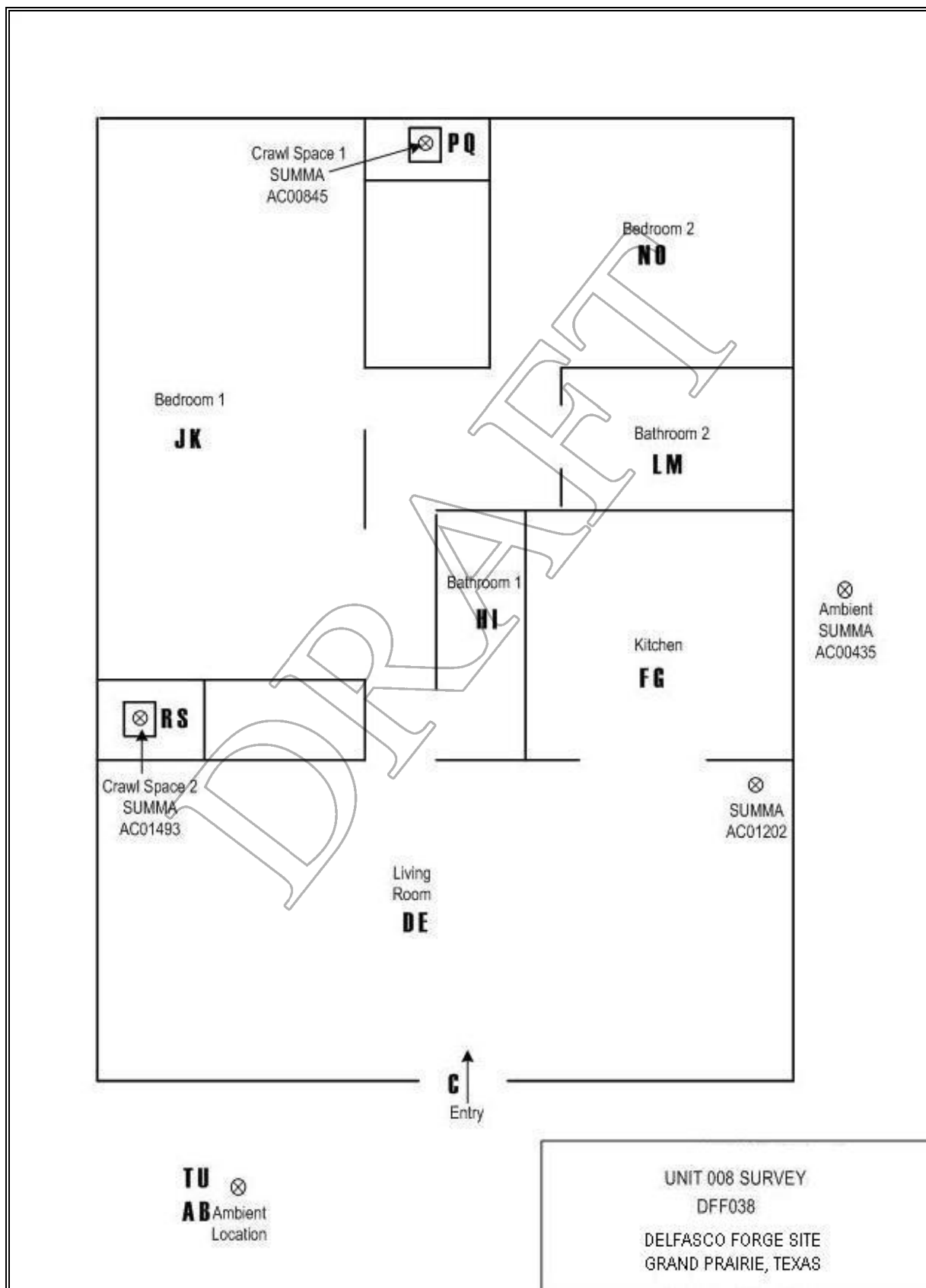


Figure 25b

TAGA File Event Summary File: DFF038 Acquired on 22 May 2008 at 15:19:50 Title: Unit 008 Survey			
Flag	Offset Time	Offset Sequence	Description
A	1.9	138	Start of the pre-entry ambient
B	2.9	208	End of the pre-entry ambient
C	5.0	358	Entering the unit
D	5.4	381	Start of the living room
E	6.4	454	End of the living room
F	6.8	480	Start of the kitchen
G	7.8	551	End of the kitchen
H	8.7	614	Start of bathroom one
I	9.7	684	End of bathroom one
J	9.9	703	Start of bedroom one
K	10.9	773	End of bedroom one
L	11.3	797	Start of bathroom two
M	12.3	869	End of bathroom two
N	12.6	889	Start of bedroom two
O	13.6	963	End of bedroom two
P	14.8	1047	Start of crawl space one
Q	15.8	1118	End of crawl space one
R	16.7	1181	Start of crawl space two
S	17.7	1251	End of crawl space two
T	19.0	1342	Start of the post-exit ambient
U	20.1	1421	End of the post-exit ambient
V	21.9	1552	Start of the 30 ml/min spike
W	22.9	1623	End of the 30 ml/min spike

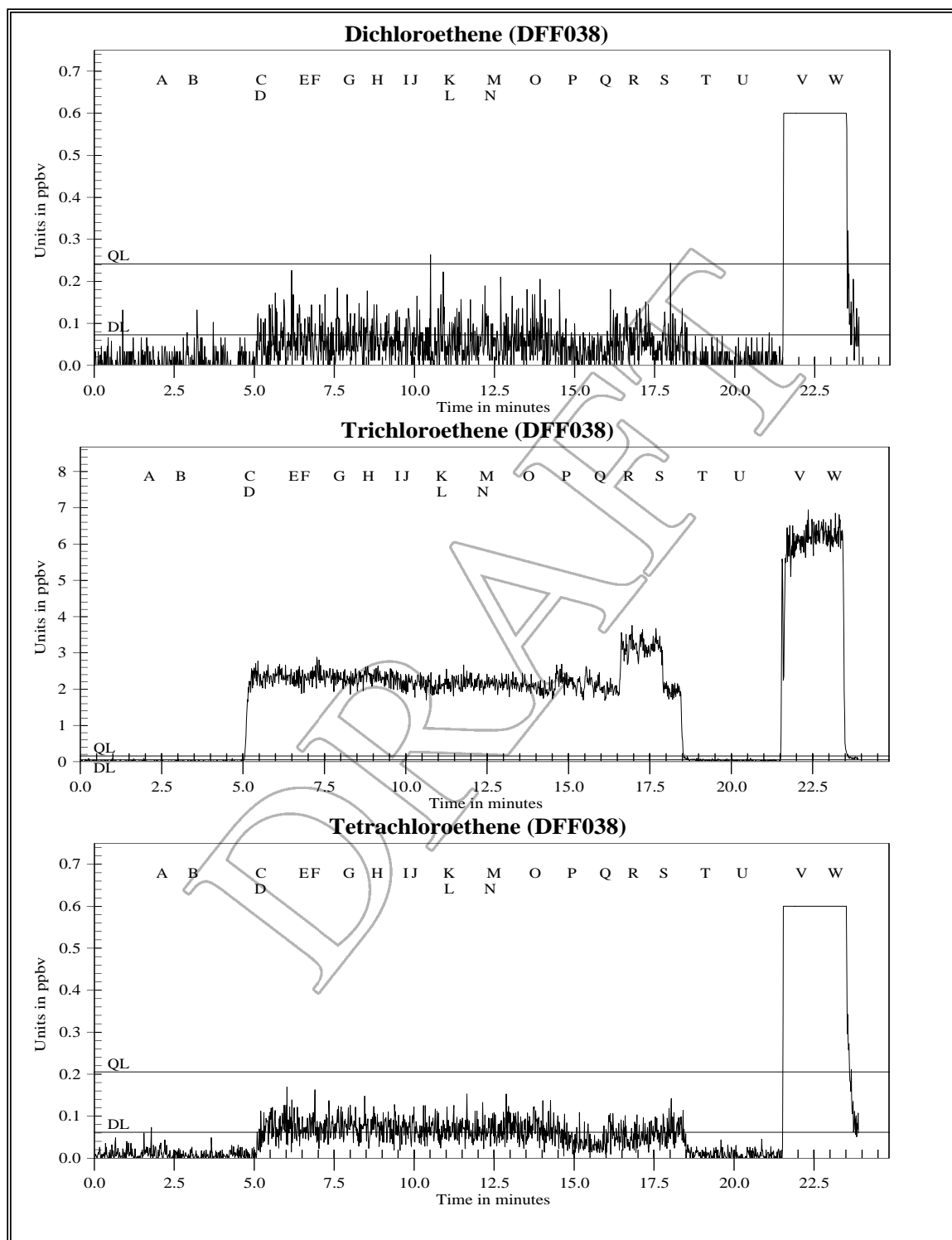


Figure 25c Unit 008 Survey for Dichloroethene, Trichloroethene, and Tetrachloroethene

Figure 25d

TAGA Target Compound Summary for Unit 008 Survey File: DFF038 Acquired on 22 May 2008 at 15:19:50				
		Dichloroethene	Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.072	0.046	0.062
Quantitation Limits - QL:		0.24	0.15	0.21
Flags	Description	Dichloroethene	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.072	DL=0.046	DL=0.062
D - E	Living room	DL=0.072	2.3	0.078J
F - G	Kitchen	DL=0.072	2.4	0.075J
H - I	Bathroom one	DL=0.072	2.3	0.072J
J - K	Bedroom one	DL=0.072	2.1	0.067J
L - M	Bathroom two	DL=0.072	2.2	0.066J
N - O	Bedroom two	DL=0.072	2.1	0.069J
P - Q	Crawl space one	DL=0.072	2.2	DL=0.062
R - S	Crawl space two	DL=0.072	3.2	DL=0.062
T - U	Post-exit ambient	DL=0.072	DL=0.046	DL=0.062
V - W	30 mL/min spike	6.8	6.2	6.3

Concentrations are given in parts per billion by volume
J = Concentration detected below the quantitation limit

APPENDIX A

Standard Gas Cylinder Certification

Delfasco Forge Site

Final Analytical TAGA Report

July 2008

DRAFT

DRAFT



Spectra Gases, Inc.

3434 Route 22 West, Branchburg, New Jersey 08876 USA

ISO 9001:2000

SHIPPED FROM: 80 INDUSTRIAL DRIVE ALPHA, NJ. 08865

SHIPPED TO: Lockheed Martin / REAC
GSA Raritan Depot, Bldg. 209
2890 Woodbridge Ave.
Edison, NJ 08837

CERTIFICATE
OF
ANALYSIS

SGI ORDER # : 117006

ITEM# : 1

CERTIFICATION DATE: 10/01/2007

P.O.# : Verbal-Chuck

BLEND TYPE: CERTIFIED

CYLINDER # : CC-256091

CYLINDER PRES: 1365 psig

CYLINDER VALVE: CGA 350

PRODUCT EXPIRATION DATE: 10/01/2008

ANALYTICAL ACCURACY: +/- 2%

COMPONENT	REQUESTED GAS CONC	ANALYSIS
Vinyl Chloride	20.0 ppm	20.4 ppm
1,1-Dichloroethene	20.0 ppm	20.9 ppm
Benzene	20.0 ppm	20.5 ppm
Trichloroethylene	20.0 ppm	20.3 ppm
Toluene	20.0 ppm	20.3 ppm
Tetrachloroethylene	20.0 ppm	20.3 ppm
p-Xylene	10.0 ppm	10.1 ppm
m-Xylene	10.0 ppm	10.1 ppm
o-Xylene	10.0 ppm	10.1 ppm
Nitrogen	Balance	Balance

ANALYST: Lou Lorenzetti
Lou Lorenzetti

DATE: 10/01/2007

Tel: +1 908-252-9300 Fax: +1 908-252-0811
www.spectragases.com

DRAFT

APPENDIX B

Compiled Meteorological Data

Delfasco Forge Site

Final Analytical TAGA Report

July 2008

DRAFT

DRAFT

**Local Climatological Data-Hourly Observations Table
Dallas Executive Airport, Dallas, TX**

Elevation: 650 ft. above sea level

Latitude: 32.681° N

Longitude: -96.868°

19 through 23 May 2008

Date	Time	Temp (F)	Dew Point Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
5/19/2008	53	68	48	49	5	190	29.11	
5/19/2008	153	68	48	49	5	180	29.09	
5/19/2008	253	67	48	51	5	190	29.09	
5/19/2008	353	67	48	51	5	190	29.09	
5/19/2008	453	68	49	51	6	180	29.08	
5/19/2008	553	67	51	57	5	190	29.09	
5/19/2008	653	71	51	49	6	190	29.09	
5/19/2008	753	76	53	45	6	180	29.09	
5/19/2008	853	82	54	38	8	220	29.09	
5/19/2008	953	85	56	37	6	220	29.08	
5/19/2008	1053	88	54	31	9	210	29.06	
5/19/2008	1153	90	55	31	14	250	29.04	
5/19/2008	1253	92	54	28	9	220	29.02	
5/19/2008	1353	92	54	28	8	200	29.01	
5/19/2008	1453	92	54	28	10	180	28.98	
5/19/2008	1553	92	54	28	10	180	28.95	
5/19/2008	1653	91	54	29	9	190	28.95	
5/19/2008	1753	90	54	29	10	190	28.95	
5/19/2008	1853	87	54	32	9	180	28.93	
5/19/2008	1953	84	56	38	8	170	28.93	
5/19/2008	2053	82	56	41	9	180	28.95	
5/19/2008	2153	80	55	42	8	180	28.95	
5/19/2008	2253	78	55	45	8	180	28.96	
5/19/2008	2353	77	54	45	7	180	28.96	
5/20/2008	53	78	52	40	7	180	28.96	

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table

Dallas Executive Airport, Dallas, TX

Elevation: 650 ft. above sea level

Latitude: 32.681 ° N

Longitude: -96.868°

19 through 23 May 2008

Date	Time	Temp (F)	Dew Point Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
5/20/2008	153	78	52	40	6	190	28.96	
5/20/2008	253	74	53	48	5	180	28.98	
5/20/2008	353	67	55	66	3	160	29.00	
5/20/2008	453	67	56	68	0	0	29.02	
5/20/2008	517	64	55	73	3	180	29.03	
5/20/2008	525	64	55	73	6	170	29.02	
5/20/2008	544	64	55	73	3	160	29.04	
5/20/2008	551	64	55	73	5	160	29.04	
5/20/2008	553	65	56	73	5	160	29.04	
5/20/2008	620	66	57	73	5	170	29.05	
5/20/2008	645	70	57	64	6	180	29.06	
5/20/2008	653	70	57	64	5	180	29.06	
5/20/2008	753	75	58	56	8	200	29.06	
5/20/2008	832	82	59	46	0	0	29.08	
5/20/2008	843	82	57	43	0	0	29.08	
5/20/2008	853	84	56	38	7	VR	29.08	
5/20/2008	903	84	54	36	6	VR	29.07	
5/20/2008	925	82	55	40	6	220	29.06	
5/20/2008	953	84	54	36	9	290	29.08	
5/20/2008	1024	84	57	40	3	340	29.08	
5/20/2008	1046	88	57	35	3	10	29.08	
5/20/2008	1053	87	57	36	5	VR	29.09	
5/20/2008	1153	86	55	35	6	60	29.09	
5/20/2008	1253	88	57	35	8	50	29.08	
5/20/2008	1353	88	58	36	9	70	29.07	
5/20/2008	1453	89	61	39	9	60	29.06	
5/20/2008	1553	89	62	41	10	30	29.05	
5/20/2008	1653	89	60	38	11	40	29.04	
5/20/2008	1753	88	63	43	9	60	29.03	
5/20/2008	1853	86	59	40	8	50	29.03	
5/20/2008	1953	82	58	44	7	60	29.04	
5/20/2008	2053	80	55	42	7	50	29.05	
5/20/2008	2153	78	54	44	9	60	29.06	

Wind direction is the direction from which the wind is blowing.

**Local Climatological Data-Hourly Observations Table
Dallas Executive Airport, Dallas, TX**

Elevation: 650 ft. above sea level

Latitude: 32.681° N

Longitude: -96.868°

19 through 23 May 2008

Date	Time	Temp (F)	Dew Point Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
5/20/2008	2253	76	53	45	7	60	29.05	
5/20/2008	2353	74	54	50	5	70	29.05	
5/21/2008	53	73	55	53	6	70	29.03	
5/21/2008	153	72	53	51	8	60	29.03	
5/21/2008	253	71	51	49	7	80	29.02	
5/21/2008	353	70	51	51	7	90	29.02	
5/21/2008	453	68	51	55	6	100	29.03	
5/21/2008	553	66	53	63	7	110	29.03	
5/21/2008	653	70	54	57	7	110	29.03	
5/21/2008	753	73	55	53	8	100	29.05	
5/21/2008	853	76	55	48	10	100	29.04	
5/21/2008	953	80	60	51	14	120	29.01	
5/21/2008	1053	81	66	60	11	130	28.99	
5/21/2008	1151	84	70	63	11	160	28.96	
5/21/2008	1153	83	69	63	11	130	28.96	
5/21/2008	1251	84	70	63	15	160	28.95	
5/21/2008	1253	85	69	59	14	160	28.95	
5/21/2008	1353	85	68	57	16	150	28.92	
5/21/2008	1453	86	68	55	18	140	28.90	
5/21/2008	1553	86	68	55	16	150	28.86	
5/21/2008	1653	87	67	52	16	170	28.83	
5/21/2008	1753	86	66	51	15	160	28.82	
5/21/2008	1853	84	68	59	13	160	28.81	
5/21/2008	1953	83	67	59	16	160	28.82	
5/21/2008	2053	82	68	63	15	150	28.82	
5/21/2008	2153	80	69	69	14	150	28.83	
5/21/2008	2253	80	70	72	18	150	28.83	
5/21/2008	2353	78	69	74	17	160	28.83	
5/22/2008	53	77	68	74	13	180	28.83	
5/22/2008	134	75	68	79	11	170	28.83	
5/22/2008	151	75	68	79	11	160	28.83	
5/22/2008	153	76	68	76	13	170	28.83	
5/22/2008	246	75	68	79	10	170	28.82	
5/22/2008	253	75	68	79	14	160	28.82	
5/22/2008	353	75	68	79	17	160	28.81	
5/22/2008	453	74	68	82	16	160	28.80	
5/22/2008	539	75	70	85	13	160	28.82	
5/22/2008	548	75	70	85	14	160	28.82	
5/22/2008	553	75	69	82	17	160	28.82	
5/22/2008	618	75	70	85	13	170	28.84	

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table
Dallas Executive Airport, Dallas, TX

Elevation: 650 ft. above sea level

Latitude: 32.681° N

Longitude: -96.868°

19 through 23 May 2008

Date	Time	Temp (F)	Dew Point Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
5/22/2008	653	75	69	82	11	160	28.84	T
5/22/2008	718	75	70	85	16	150	28.84	
5/22/2008	753	76	69	79	15	160	28.84	T
5/22/2008	853	79	69	72	16	170	28.83	
5/22/2008	901	79	70	74	16	160	28.83	
5/22/2008	924	79	70	74	14	160	28.83	
5/22/2008	934	79	70	74	14	160	28.82	
5/22/2008	953	82	70	67	16	160	28.82	
5/22/2008	1053	82	69	65	20	160	28.82	
5/22/2008	1153	85	69	59	17	170	28.82	
5/22/2008	1253	87	69	55	23	160	28.79	
5/22/2008	1353	88	70	55	17	150	28.79	
5/22/2008	1453	88	70	55	21	160	28.78	
5/22/2008	1553	89	69	52	16	160	28.77	
5/22/2008	1653	88	69	53	16	160	28.74	
5/22/2008	1753	87	70	57	16	160	28.74	
5/22/2008	1853	85	69	59	18	150	28.76	
5/22/2008	1953	83	70	65	10	150	28.79	
5/22/2008	2053	82	71	69	11	140	28.82	
5/22/2008	2153	81	71	72	18	140	28.85	
5/22/2008	2253	80	71	74	17	130	28.86	
5/22/2008	2353	79	71	77	17	140	28.89	
5/23/2008	49	79	72	79	17	130	28.90	
5/23/2008	53	79	71	77	16	130	28.90	
5/23/2008	146	79	70	74	18	130	28.90	
5/23/2008	151	79	70	74	18	140	28.90	
5/23/2008	153	78	70	77	15	140	28.90	
5/23/2008	220	79	70	74	15	130	28.90	
5/23/2008	253	78	71	79	14	130	28.90	

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table**Dallas Executive Airport, Dallas, TX**

Elevation: 650 ft. above sea level

Latitude: 32.681° N

Longitude: -96.868°

19 through 23 May 2008

Date	Time	Temp (F)	Dew Point Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
5/23/2008	310	77	72	85	15	130	28.90	
5/23/2008	339	77	72	85	14	130	28.90	
5/23/2008	353	77	71	82	13	130	28.90	
5/23/2008	453	77	71	82	17	140	28.92	
5/23/2008	553	77	71	82	11	140	28.92	
5/23/2008	606	77	72	85	17	140	28.93	
5/23/2008	653	78	71	79	13	150	28.95	
5/23/2008	713	79	72	79	16	150	28.95	
5/23/2008	753	79	71	77	14	160	28.96	
5/23/2008	853	80	71	74	10	160	28.97	
5/23/2008	925	82	72	72	10	160	28.98	
5/23/2008	953	84	70	63	14	180	28.98	
5/23/2008	1053	86	70	59	15	160	28.97	
5/23/2008	1153	87	70	57	21	150	28.96	
5/23/2008	1253	90	70	52	17	150	28.95	
5/23/2008	1353	91	71	52	16	140	28.95	
5/23/2008	1453	91	71	52	20	150	28.95	
5/23/2008	1553	90	71	54	21	140	28.95	
5/23/2008	1653	89	71	55	13	140	28.95	
5/23/2008	1753	89	72	57	14	140	28.95	
5/23/2008	1853	87	73	63	16	130	28.95	
5/23/2008	1953	85	73	67	13	130	28.96	
5/23/2008	2053	84	72	67	16	130	28.98	
5/23/2008	2153	82	72	72	15	140	29.00	
5/23/2008	2253	81	71	72	15	150	29.00	
5/23/2008	2353	80	71	74	15	150	28.99	

Wind direction is the direction from which the wind is blowing.